

MOTOR AGE

GOOD ROADS SNOWBALL GATHERS IMPETUS



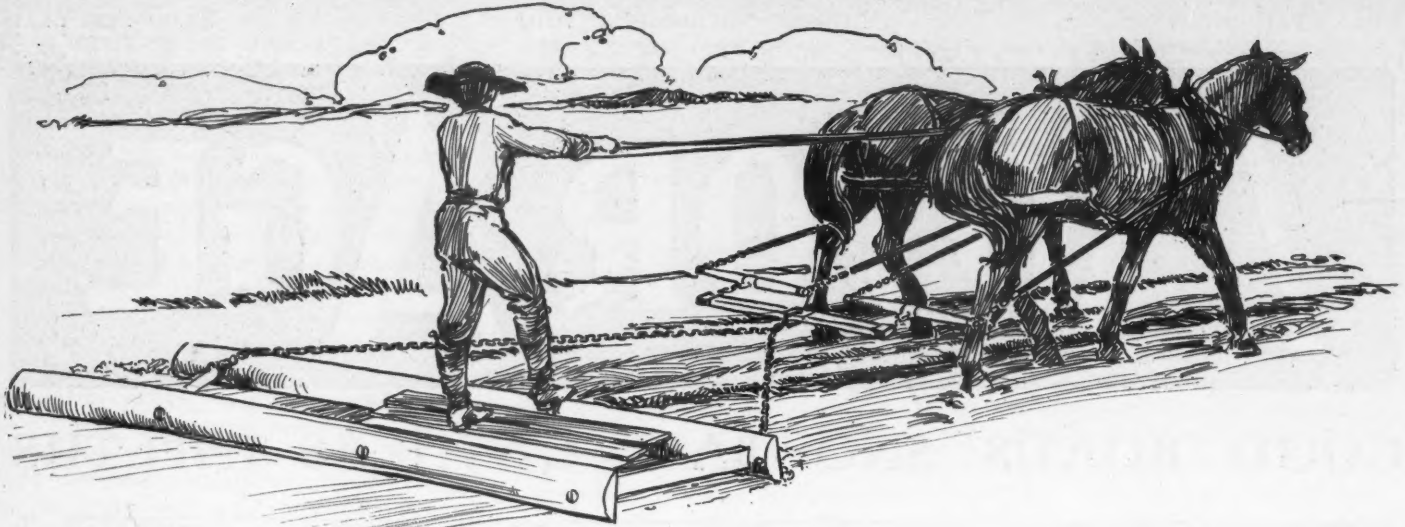
CHICAGO, Oct. 31—The good roads snowball has started, and as it gathers impetus and gains in size as it rolls along it leaves in its wake improved highways which emphasize more strongly than ever that the good roads era is at hand. Started primarily by the cyclists and later taken up by the motorists where the wheelmen left off, the movement at the present time is making gigantic strides. The farmers have become staunch helpers and make powerful allies, while only recently a more important factor than all has been added to the list of those who believe in the good roads doctrine—the railroads.

It is most astonishing to the lay public that a big corporation like a railroad company should be interested in highway improvement, but the fact remains that the officials of at least one railroad, the powerful Pennsylvania, have been broad-minded enough to realize that their business will be greatly augmented if the entire country is criss-crossed by roads that can be used

at all times of the year. Of course railroads suffer loss of patronage to a certain extent when good roads abound because of the increase of touring in motor cars, but what they lose this way they more than make up in freight receipts, in that when there are good roads farmers are able to get their products to the railway stations without much trouble and this means increased freight receipts, and that's where the money is so far as the railway company is concerned.

The Pennsylvania railroad has taken important action in this respect by establish-

ing a good roads department, at the head of which is D. Ward King, inventor of the split-log drag, which has done so much in converting ordinary dirt roads into highways that can be used even in rainy



IN OPERATING THE KING DRAG FARMER IS ADVISED TO USE LAZIEST TEAM HE HAS IN HIS STABLE

weather. Going still further, the railroad company has brought out a pamphlet by Mr. King giving the farmers advice on the construction of roads, pointing out to them the necessity for improving the highways and illustrating the operation of the King drag.

It would seem as if there is more doing in the highway improvement way this fall and winter than ever before. The national good roads convention in St. Louis a month back stirred up more genuine enthusiasm for the cause than any other previous effort of the sort. Politicians, railroad men, farmers and motorists all join hands in the common cause and the results of the convention are bound to bear good fruit. Iowa has proved to be the most progressive of the western states this fall in a good roads way, demonstrating by its river-to-river roads that it is possible to secure good thoroughfares even without the expenditure of millions for macadam.

Out on the Pacific coast they have formed a Pacific Highway Association with the idea of constructing a motor driveway from Alaska to Mexico, which will be a model of its kind and which is receiving the strongest kind of support. Mexico is supporting this movement at its end and in addition is building motor thoroughfares of its own. Texas is preparing to spend millions for better roads while Missouri and Nebraska are awakening to the possibilities of the movement. Even poor old Illinois has at last realized that it is away behind the procession and is making its plans to catch up with the band wagon. Virginia and other southern states are making special bond issues with which to improve their roads. So it goes all through the country, and if the next 2 or 3 years do not show a marked improvement in American roads, it will not be because of lack of money, lack of enthusiasm or lack of support.

Following is the announcement of the new policy of the Pennsylvania railroad regarding good roads and the pamphlet written by Mr. King and published by the

railroad. It makes most interesting reading:

"In an endeavor to stimulate interest in the good roads movement in the states through which it operates, the Pennsylvania railroad has issued a pamphlet entitled 'Good Roads at Low Cost.' This booklet is being given a wide distribution in the country districts throughout Pennsylvania railroad territory. 'Good Roads at Low Cost' was written for the Pennsylvania railroad by D. Ward King, who is an acknowledged expert on road-making. He is the author of a pamphlet distributed by the department of agriculture some time ago. While the management of the Pennsylvania railroad has for some time been keenly interested in the subject of good roads, in the past year it has redoubled its efforts in this direction. Meetings of agents have been held at different points, while the general manager's staff has also taken up the subject of improving the roads radiating from the company's stations. The railroad company has had D. Ward King, the inventor of the split-log drag, which the farmers make themselves, deliver lectures at various stations in the state of Pennsylvania. The

split-log drag, which can be made by any one following the directions given in the pamphlet just issued by the railroad company, has been used with telling effect in many parts of the country. A number of these drags have been placed at various Pennsylvania railroad stations throughout the state of Pennsylvania in order that road supervisors and others might operate them.

"The railroad's activity in the good roads movement is actuated by the desire to have the highways leading from the stations in passable condition during all seasons of the year. In the winter months, thousands of miles of dirt roads are almost impassable, and farmers are unable to get to and from railroad stations, thereby causing a congestion of traffic when roads are opened. The railroad company has, therefore, interested itself in good roads with the view that they will open up the rural districts and hasten their development, which will be a forerunner of increased railroad traffic."

The pamphlet written by Mr. King is as follows:

Millions of tons of freight hauled over the lines of the Pennsylvania railroad are



AN ARKANSAS ROAD IN SAD REPAIR



SAMPLE OF COUNTRY ROAD FOUND IN STATE OF MISSISSIPPI

moved in wagons either before or after the rail journey. Naturally the railroad company is interested in assisting in the improvement of the country roads leading to and from its stations, for it is over these highways that this freight is hauled. In the winter months thousands of miles of these roads are almost impassable and farmers are unable to get to and from railroad stations. Good roads will tend to open up the rural districts and hasten their full development. Good roads will make for prosperity, which must be a forerunner of an increased railroad traffic.

There are reasons why the Pennsylvania railroad is giving particular attention to the King drag campaign for cheaper and better roads. The railroad is concerned in getting the best roads for the least money. And then, again, since the Pennsylvania is certain to share with the rest of the people in any widespread community uplift, it will find benefit in the improved conditions which invariably follow the betterment of the highways.

Perhaps railroaders take to the King-drag because it applies to the wagon road the railroad's own plan of up-keep; the plan of

constant watchfulness. The constant watchfulness of the Pennsylvania railroad is shown by the gangs of men who, with shovel and pick and hammer and wrench, go up and down the right-of-way every day and night. The watchfulness of the King system is expressed by the passage of the road-drag to and fro after every rain or wet spell.

Too, the railways find that the plan of doing a little very often is imperative. I remember very distinctly a statement uttered some years ago by a general manager with whom I was in conversation. He said: "We have considerable difficulty in educating our men to raise a grade slowly; until they become thoroughly broken in they are very apt to get more new dirt under the ties than should be put there, and then if we have wet weather the soft, mushy earth squashes up between the rails, covering the ties, not infrequently interfering with the safe passage of trains, and always giving a nasty, mean job of removing the excess." This railway experience closely parallels the practice of the big grader men, who habitually pile up so much fresh earth that the people cannot travel in the middle of the highway.

There are more than 400,000 miles of public wagon-road in the states through which the Pennsylvania railroad system operates. Three and one-half hundred thousand of these miles of road are of plain every-day dirt; in other words, there are 357,768 miles of road, to be exact, in these seven Pennsylvania system states that the King drag can convert into boulevards if it is given the opportunity. In addition to these miles of dirt there are 47,000 miles of gravel road, and it has been discovered that the King drag produces the same improvement on gravel pikes that it does on mud roads. The amount of stone road in these seven states is comparatively small, footing up only 18,000 miles. May I ask you to observe that no negative opinions are here expressed with regard to the action of the King drag on macadam? While I do not now push the claims of the drag as a stone-road implement, the time may come when I will do so.

The figures named in the preceding paragraph form a clear-cut measure of the task set for road builders.

Shall we survey the situation?

Beginning with the youngest of the states through which the Pennsylvania operates, we find Illinois with an army of drags estimated at 20,000. The contagious epidemic is spreading over Indiana. Ohio is dragging many miles of gravel as well as earth roads. Lycoming county, Pennsylvania, boasts 150 King drags; Lancaster county, in the same state, claims 1,000, while Harrisburg, Pittsburg, Johnstown, Wilkes-Barre, and other Pennsylvania cities and towns, are centers from which is being scattered the new gospel of good roads without money. Maryland, too, has made more than one King drag campaign, and New York, New Jersey and Delaware each have given evidence that the leaven is working. So the Pennsylvania system has asked me to put on paper a few details which we hope may prove helpful to beginners.

Road dragging is more than standing on a plank and holding the reins over a span of horses. And there is more in drag-building than merely the pinning together of the two



THOUSANDS OF TONS OF FREIGHT HAULED OVER THE LINES OF THE PENNSYLVANIA ARE MOVED IN WAGONS EITHER BEFORE OR AFTER THE RAIL JOURNEY

slabs of a split log. It is true, as I have said many times before, that almost any kind of driving over a road with the roughest possible pair of slabs joined together in the hastiest manner will surely improve the ordinary road. But it also is true that, if we are to obtain first-class results, the implement, the team and the driver must be just right. The team should be slow and steady; it should be heavy enough to haul the drag with ease, and the horses will prove more satisfactory if they are intelligent enough to take an interest in their work and to learn. Such a team will be easier to handle and will do better work the longer they are used on the drag.

The driver should be a man of a mechanical turn of mind and a good horseman; for the management of the team has much to do with first-class road-dragging. The driver, of course, should be on the alert to catch the finer points of the operation and to correct the mistakes he is apt to make at the start.

However able and attentive the driver, and no matter how powerful and willing the team, if the drag is improperly built, or, being well-built, if it is mismanaged, the best work cannot be done.

The King drag, so named by the road-drag enthusiasts of Iowa, is no pet of mine—it is a survival of the fittest. I got fine results from the two-slab King drag and then set about its improvement. I built six different styles that I can remember at this moment. Quite likely I built others which I have forgotten. My real pet, the design which I fondly expected to displace the common form, and do away with it entirely, is rotting by the fence. I laid awake at night planning the pet and felt positive that it would prove far superior to the old drag, but the pet itself is the failure. I mention these facts in order that the reader may know that I do not advocate this particular design through any personal prejudice. My choice is a result of careful experiment and selection.

Build a light drag. One can do things with a light drag that cannot be done with a heavy one. And then one can weight a light drag and so make it heavy, if it needs to be heavy for some special occasion. But if a drag is heavily built of heavy wood, how can it be lightened? Do not build the



IOWA'S RIVER-TO-RIVER ROAD IMPROVED BY THE SPLIT DRAG

drag too long, especially if your roadway is rather narrow or runs between high banks.

Where the road is of proper width the length of the drag should be governed by the size of the team; a 7-foot drag for a span of 1,200-pound horses; 8 feet for a team of 1,600-pound horses. Nine feet would be rather long for any uncared-for road right at the beginning, no matter how large the horses might be.

Build a drag from a cedar post or the end of a telephone pole, measuring 10 to 12 inches in diameter, or from some other light timber log. Use a plank as a last resort.

Split the post or log and select the heavier and sounder slab for the front of the drag. Find a point about 4 inches from the end of this slab, the end that is to travel in the middle of the road, and bore a 2-inch auger hole at right angles to the face of the slab and in its center. Then, 22 inches from the other end of the slab bore another 2-inch hole in the same manner. Now, half-way between these two holes bore a third, getting the three in line with each other and in the center of the slab. The other slab may now be brought up behind the first. Allow 6 inches between the ditch end of the rear slab and the hole in the ditch end of the front slab; mark and bore the three holes. Thus, when they are pinned together, the ditch end of the front slab will project

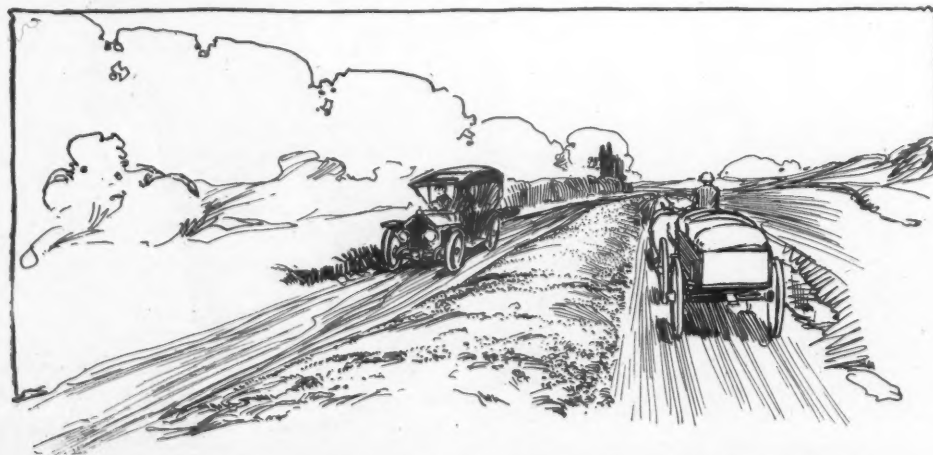
some 16 inches further toward the ditch than the rear slab.

Now prepare the stakes to join the slabs. I prefer stakes cut from an osage hedge, about 2½ inches through. If hedge is not convenient, rip some pieces out of a 2-inch oak plank; full 2 inches square is sufficient. Shave the ends of the stakes and slip the slabs on until the slabs are within 30 inches of each other; then mark each stake with a lead pencil to show the place where the slab fits. You are now ready to wedge the stakes into the front slab.

Don't laugh when I caution you to split the stakes and drive the wedges at right angles to the grain of the slab. When you laugh you prove you need no caution. But I have heard of men who split the slab for lack of knowledge or the caution.

Drive the rear slab on the stakes 2 or 3 inches from the pencil marks and arrange the brace. Put the front end of the brace down within an inch of the ground and well out to the end of the front slab. Notch it in; drive the rear slab back to the marks, catching the brace, and then wedge the stakes securely. If this is well done the brace will never escape. At the front side saw the ends of the stakes off flush with the slab; at the rear allow the projecting ends to remain. Their presence at the rear will serve two purposes. They will answer, without words, the question of how the slabs are fastened together. And they come very handy at times when you wish to lift the drag.

Make a platform of inch boards to drop between the slabs, on which the driver may stand. Nail the boards to cleats, being mindful to arrange the cleats so that they will not interfere with the cross-stakes of the drag. Cut the cleats about an inch shorter than the places they are to fit and nail the boards half an inch from the ends of the cleats. Use at least three boards and space them an inch apart, so that the earth, which at times is likely to pile up against the front slab and fall back on the platform, can readily sift through. Otherwise there will come occasions when you will be obliged to lift the platform to dump it.



LOOSE MATERIAL IN MIDDLE OF ROAD DRIVES THE TRAFFIC TO EITHER SIDE



IOWA ROAD AFTER BEING SCRAPED WITH THE SPLIT DRAGS

Next bore a $1\frac{1}{2}$ -inch hole close to the ditch end of the front slab and in the center of it. Get this hole within an inch of the end of the slab if the wood is sound and tough. Secure a trace chain, regulation length, and 10 feet of No. 9 smooth wire. Pass the wire around the stake that is at the middle-of-the-road end of the drag. Pass the wire around this stake twice and twice through the round ring found at the end of the trace chain; then tie. Slip a twisted snatch link on to the chain; pass the free end of the chain through the $1\frac{1}{2}$ -inch hole; drop an old bolt into a link behind the slab to hold the chain when the strain of draft comes, and you are ready for the double-tree and team. Do not put the clevis through a link of the trace chain or the link will break. If you have no snatch link, put the clevis around the chain and wire it there. Fasten the clevis at a point on the chain about 2 feet 8 inches from the $1\frac{1}{2}$ -inch hole. Stand on the ditch end of the drag and drive off. By changing the position of the clevis on the chain and your own position on the drag you will be able to meet the most varying conditions.

At the start a plain wooden edge to the drag is sufficient, but after several months' work, as the road grows level and hard, you will find it wise to put 3 or 4 feet of iron on the ditch end of the front slab. There may come times when you will wish for sharp steel. But by running a corn cultivator or a disk over the sides of the road ahead of the drag you will likely find a piece of wagon tire sufficient. I am myself partial to the sharpened steel, but it makes trouble at bridges and culverts and calls for more careful driving. Whether iron or steel is used, it should not be allowed to project more than $\frac{1}{4}$ inch below the wood.

It is probable that you can improve the road by dragging it the moment the drag is finished, no matter what the condition of the earth may be. Under any circumstances a certain amount of experience can be obtained. Ordinarily, however, it is best to use the drag when the soil is moist, but not sticky.

Do not allow yourself to get in a hurry to build a high grade. Obtain a smooth, hard foundation and then build on it gradually.

The formula for making good roads without money is based on several fundamental truths which have been more or less ignored by the road builders of the past. In the first place, a traveled road that has been undisturbed for a year or more possesses a tough, hard crust which is a valuable asset. Many roadmen cover this impervious crust with a thick blanket of soft, loose earth the first thing they do; while others tear it all to pieces and try, unsuccessfully, to rearrange it.

Now this crust or shell should neither be broken nor covered; it should first be leveled with the drag and all the wrinkles and ruts smoothed out of it. Then it should be thickened gradually. No matter how flat or rough and rutty this crust may be, it nevertheless is the best available surface for travel, and a serious blunder is committed when it is destroyed or covered.

Again, I believe a blunder is made whenever loose material of any sort is placed on the road in sufficient quantities to drive the travel away from the middle of the highway. Still again, not a few men seem to confuse slope with surface drainage. But a loose, porous, earth surface, even if it is a

sloping surface, will not shed water; it will absorb it. Now the formula for building good roads without money avoids all these mistakes. It is given below. Read it carefully.

Be careful to locate the $1\frac{1}{2}$ -inch hole for the draught chain as near as possible to the ditch end of the front slab. Haul the drag at a sharp angle.

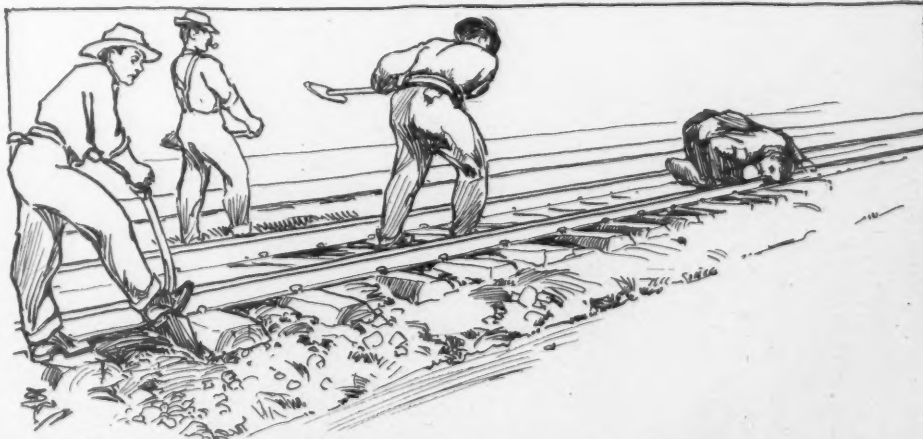
Use the pokiest, laziest team you own and give them their time. Just so they keep moving they will be going swiftly enough. After you have used a drag a year and have learned when to drive fast and when to drive slowly you can carry a whip.

This formula will work on gravel roads just as nicely as on earth roads, but more time is needed to get results.

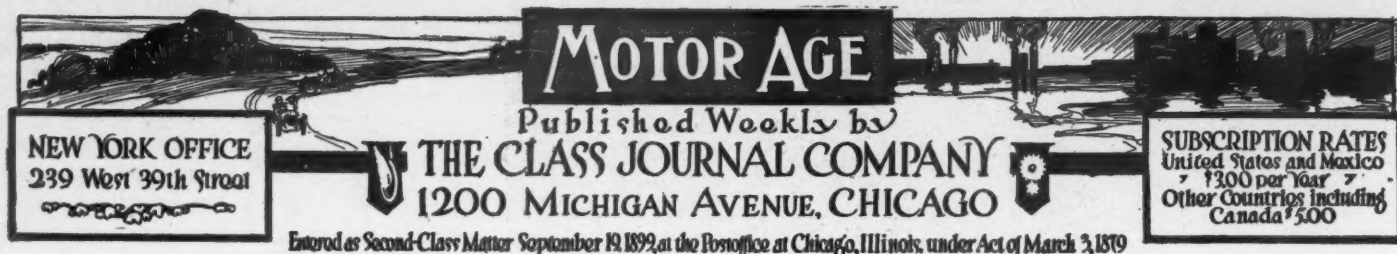
Build a King drag according to instructions. Hitch two horses to the drag as directed, so that while the driver stands near the ditch end of the drag it will follow the team at an angle of about 45 degrees. Drive with one horse on each side of the wheel track to your neighbor's front gate toward town and come home over the other wheel track, smoothing the road and moving a small amount of earth toward the middle.

After the next rain or wet spell drag the road again. Repeat the dragging after each storm until the surface touched by the drag is smooth and is slightly higher in the center than at the sides. The contour described may possibly be found after the fourth rain and dragging; it surely will exist after the sixth rain and dragging, provided the drag is properly built and is used with a reasonable amount of skill.

To widen and elevate, plow a shallow furrow—please notice the word shallow—just outside the dragged portion of the road, turning the furrow toward the dragged portion. Spread this furrow—notice the word spread—over the road with the drag. When you have finished this process you will find that the roadway will be about 2 feet wider and the middle will be a little higher. After the next rain or storm, plow another furrow outside the first and drag again, adding 2 feet more to the width and building the road still a little higher in the center. Only plow one furrow between rains. When the road becomes wide enough quit plowing. This formula is guaranteed to produce results.



RAILROAD COMPANIES WORK CONSERVATIVELY IN TRACK-LAYING, RAISING GRADES SLOWLY



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Commercial Car's Chance

EVIDENCES are at hand that the commercial motor vehicle has at last reached the turning of the road which leads it into the broad glare of publicity. For years makers of these vehicles have been content to plod along with their experiments and their gradual perfection of their product, feeling the ice carefully before taking their next step. They have been chary of participating in contests such as promoted for makers of pleasure vehicles, desiring to wait until such a time as when, in their opinion, their goods could go under the public's microscope and thoroughly demonstrate not only the utility of this method of transportation, but also its economy and durability. Tests have been held within the past month in Philadelphia, Boston, New York and Chicago, in which only these commercial propositions competed. The eagerness with which the commercial vehicle manufacturers gave their support to these events shows very plainly that the business rigs are now ready for public inspection. As in the case of the pleasure-car contests in their earlier days, so it now is with the motor truck and wagons. The rules are most crude and are not entirely applicable to this type of vehicle; and while the results in general have been good, they are not as satisfactory as they might be.

THE run from Chicago to Milwaukee and return last week is an example of this. In this event there were fifty-one starters, ranging in size from tiny delivery wagons up to 5-ton trucks, and these fifty-one vehicles were required to run from Chicago to Milwaukee and back, a distance of 212 miles, each one carrying its catalog load. Owing to the weather conditions that prevailed, which caused many of the contestants to lose their course, it was impossible to secure the results desired in the way of figures showing the economy of operation, the main consideration with the business men who might be thinking of investing. Because of this, the event became an out-and-out reliability run, with penalties imposed for failure to make controls on schedule time and for mechanical weaknesses. Notwithstanding these handicaps the contest was of considerable value to manufacturers of commercial vehicles in that the road performances attracted widespread attention in the business world. Milwaukeeans in particular were astounded when they were told that a 3-ton truck had carried its full load and had covered 108 miles in less than 8 hours. They did a little figuring on their own account and discovered that the trucks actually had carried their loads from Chicago in faster time than it would have been possible to have sent the same goods by express, counting, of course, the time that would be consumed in sending the load to the express office and delivering it from the railroad depot.

OF course this is most gratifying to the makers of these trucks and delivery wagons, but still the contest lacked the finishing touch in the way of proving by dollars and cents just what could be done in the way of economy of operation. As a road demonstration it was most successful and should be followed up by other contests next year. The same kind of success has been met with in the east, where the other events of this sort were held, and this chain of runs undoubtedly will give the trade a stimulus which it greatly needs. With this impetus and the benefits accruing from the commercial sections of the two big shows this winter, the makers of these business propositions will find themselves in fine condition for the fight for the business of 1911. They are now in the publicity limelight, and it will take little effort on their part to remain there.

Helps Good Roads Cause

IF for no other reason, commercial reliability tests are of value in that they point out to the business world and the farming communities the needs of good roads. Highway doctrines may be preached to the farmers until the orators get black in the face, but your rural gentlemen need a practical demonstration to convince them that it is to their best interests to invest their money in the improvement of roads. Some of them can see little need of fixing up their highways so that touring parties may be able to roll along them in comfort; but when it is pointed out to them in so practical a manner as was done in the commercial vehicle test, they easily can see how it affects their pocketbooks. In the case of the Chicago-Milwaukee run, roads were in fairly good condition, which accounts for the fast time that was made. This proved to the farmers that, given good roads, they would be able to transport their own products to the railroads just as easily. A writer in the Saturday Evening Post, who made extensive researches in the farming communities of the southwest, discovered that the farmers who use horses for carrying their loads to market pay 25 cents a ton-mile on roads that are not up to standard. On improved highways this is reduced to 10 cents per ton-mile. This is quite a reduction, but it looks big when it is discovered that a motor truck covering the same ground and carrying the same load can do the same work for 3 cents per ton-mile.

THIS is only one of the straws that show in which direction the wind is blowing. The motor trucks and the commercial delivery wagons are securing a strong footing in the cities, but the great future of the business undoubtedly lies out in the country, where the farmer gradually is realizing that it is time to retire the horse. But before he can be thoroughly convinced in this matter he must have good roads, and therefore it is to the interests of the motor truck manufacturers to assist him in getting them. The tradesmen will find that they are not alone in this fight, for there are even more powerful influences than they at the present time. The railroads are awakening to the needs of the farmer. These big corporations realize that with good roads the farmers can reach the railroad lines much easier, at less expense, and at any time of the year. And as the business of the railroads depends upon the farmer, it is to the advantage of these railroads to help all they can.

AN example of this is had in the announcement that one of the largest railroads in the country has undertaken to spread the gospel of good roads, and in order to do this has secured an expert to distribute good roads literature and to teach the farmers how to improve their highways. Says this railroad company, the Pennsylvania: "The railroad's activity in the good roads movement is actuated by the desire to have the highways leading to the stations in passable condition during all seasons of the year. In the winter months thousands of miles of dirt are impassable and farmers are unable to get to and from railroad stations, thereby causing congestion of traffic when roads are open. The railroad company has therefore interested itself in good roads with a view that they will open up the rural districts and hasten their development, which will be a forerunner of increased railroad traffic."

ALL of this is sound logic indeed. The motoring world welcomes the railroads as an ally, and believes that with the trinity of interests, counting in the farmer, who now is one of us, it will not take long to arouse the country to the needs of improved roads.

OLDFIELD BEATEN IN COURT BY THE A. A. A.

ATLANTA, Ga., Nov. 2—Special telegram—A most important and far-reaching decision, so far as motor sports are concerned, was decided here today when an injunction granted to Barney Oldfield, restraining the American Automobile Association and the Atlanta Automobile Association from preventing his racing at the speedway meet November 3, 4 and 5, was dissolved in Judge Bell's court.

In a word, it means that Oldfield cannot race at the speedway and that the courts have no right to interfere in the business of the American Automobile Association. It is one more case of the jurisdiction of the American Automobile Association being upheld. Oldfield had his restraining injunction granted this morning at 10 o'clock, and only 2 hours was given to file an answer. The A. A. A. engaged Rosser & Barndon, leading attorneys, to defend its case. The hearing began at 4 o'clock and continued for 4 hours. In his injunction application, Oldfield charged the A. A. A. with tyranny and with not giving him a hearing at his disqualification. As a matter of fact, he was automatically disqualified by rule 58 of the 1910 contest rules. Oldfield was asked to appear before the contest board and show reason why he should not be permanently disqualified, but he failed to appear. The decision is a most important one and is practically identical with the decision of the New York supreme court in the Premier case.

With forty-six different cars entered in the 3-day meet on the speedway here, the prospects for good racing are brighter than at any previous meet here. This number of cars alone is sufficient to warrant close contests, but, in addition, there is special interest in the classy field of entrants. In the high-powered field Caleb Bragg is here with his Fiat 90, with its three valves in each cylinder; Burman is here with his 100-horsepower Marquette-Buick Special, and Joe Matson will drive the Simplex 90. Other fast cars are the Marmon, with Ray Harroun driving; the National, piloted by John Aitken; the Lozier, with Mulford up; the Stoddard-Dayton, driven by Harding, and the two Portola Pope-Hartford models that ran in the Vanderbilt.

The practice has proven quite deplorable, because of three accidents, the last one occurring at 4:30 last evening, and which robbed the racing world of one of its famous drivers in the person of Al Livingstone, of the National team, who was injured by being thrown from the car when a front tire burst. He died 4 hours later, without regaining consciousness. Livingstone was making his last practice lap in a new 1911 National car model. When the tire burst he was hugging the inner fence. The car shot towards the outer fence but was righted, and then turned a complete circle on the track and came to a stop, facing in the right direction and without upsetting or being

Southern Judge Upholds Right of Contest Board to Disqualify Racer—Al Livingstone Killed

damaged beyond a collapsed wheel, which struck the inner fence. Livingstone was thrown high in the air and landed head foremost on the track in the rear of the car. He died at the hospital tonight. Livingstone was a Pacific coast driver and this year had participated in the Elgin and Vanderbilt cup races and was an entrant in the grand prix at Savannah. At Elgin he won the Illinois cup for the 301-450 class the first day, and in the Elgin National on the second day he ran a good second to Mulford in the Lozier. In practice on Monday Horan in the Lozier went through the fence, due to a burst tire, but was not injured or the car damaged. Basle, driving the Pope-Hartford, broke a rear axle.

GEORGIA RUN RESULTS

Atlanta, Ga., Oct. 31—Of the seventy-seven cars that were entered in the recent round-the-state tour in Georgia, and of the sixty that started forty came through with perfect scores. Four of the forty were non-contestants. All time penalties against the cars that were caught in the hurricane that raged along the eastern edge of the course were withdrawn. A protest made against eleven cars for finishing in Atlanta ahead of the pacemakers was withdrawn. Here is a list of the cars that came through with perfect scores:

CARS COSTING UNDER \$801

Name and City—	Car
C. H. Baughman, Bainbridge.....	Overland
Georgia Motor Co., Atlanta.....	Brush
Georgia Auto Exch., Columbus.....	Hupmobile
M. G. Flourney, Columbus.....	Hupmobile
\$801 TO \$1,200 INCLUSIVE	
Atlanta Gas Light Co.....	Hudson
\$1,201 TO \$1,600 INCLUSIVE	
Phil Cook, Atlanta.....	Everitt 30
Abbott Motor Co., Detroit.....	Abbott-Detroit
Mich.	
Overland So Motor Car Co.....	Overland
Atlanta.	
Dr. J. B. Clark, Eastman.....	E-M-F
F. G. Edwards, Albany.....	Chalmers
C. W. Hillhouse, Sylvester.....	E-M-F
Fred Brewer, Waycross.....	Buick
B. E. Beck, Eatonton.....	Overland
Dr. H. L. Rudolph, Gainesville.....	E-M-F
Chamber of Commerce, Athens.....	Maxwell
Amesmor Co., Owensboro.....	Ames
Board of Trade, Pelham.....	Oakland
Georgia Auto Exch., Columbus.....	Mitchell

\$1,601 TO \$2,000 INCLUSIVE

Ohio Motor Car Co., Cincinnati	
Primo Motor Co., Atlanta.....	Primo
R. E. Henderson, Hampton.....	Primo
Board of Trade, Valdosta.....	Buick
Atlanta Journal, Atlanta.....	White, gas
H. H. Tift, Jr., Tifton.....	Rambler
Mrs. W. P. Brown, Nashville.....	Rambler
Mrs. John Kelley, Atlanta.....	Haynes
Case Threshing Mach. Co.....	Case
Racine, Wis.	
Chamber of Commerce, Macon.....	White, gas
Gulf Refg. Co., Atlanta.....	Haynes
Stelmo Massengale, Atlanta.....	Overland

\$2,001 TO \$3,000 INCLUSIVE

Maxwell-Briscoe, Atlanta.....	Columbia
W. D. Alexander, Atlanta.....	Franklin
Southern Ruralist, Atlanta.....	Columbia
Dolph Walker, Atlanta.....	National

ABOVE \$3,000

C. O. Summers, Barnesville.....	Knox 40
John E. Lowe, Macon.....	Oldsmobile

NON-CONTESTANTS

Atlanta Constitution, Atlanta.....	Pullman
Chronicle, Augusta.....	Speedwell
Z. W. Oglesby, Quithmann.....	Oldsmobile
Southern Bell Tel. Co., Atlanta.....	Selden

CHICAGO, Nov. 2—The Chicago Motor Club has attracted one of the largest fields that has participated in a reliability run this year, thirty-two nominations having been received for the 1,000-mile 5-day test, which starts from Chicago Monday morning. There are twenty candidates running for the Van Sicken cup, which is offered for the competition of the roadsters and toy tonneau cars, and twelve for the Stewart speedometer trophy, hung up for the touring car division. There are twenty different makes of cars represented, as follows: Haynes, Moline and Hupmobile, three each; Abbot-Detroit, Halladay, Velie, Imperial, Case and Staver-Chicago, two each; and Cunningham, Glide, Cino, Henry, Grout, Falcar, Brush, Speedwell, Krit, Lion and Midland, one each. In addition, there are nine cars listed to carry the officials—a Falcar with confetti and carrying the pilot; a Speedwell pacemaker; a Thomas technical committee car; a Moon starter's car; Kisselkar for the chief checker; two Abbot-Detroit press cars; a Staver-Chicago photographer's car; and a Staver-Chicago general executive's car.

The run will cover 1,015 miles of territory with the night controls at Moline, Quincy, Peoria and Chicago. There are six prizes up for the competition. The Van Sicken cup is for roadsters; the Stewart speedometer trophy for touring cars; the Chicago Motor Club cup team prize, and the Branstetter tire prize. The Goodrich cup is a hangover from 1908, which will go to the Haynes by default, the other two cars interested, the Premier and Franklin, which tied with the Haynes in the 1908 reliability, not being entered. Beside these there is the Standard Oil trophy, which is to be awarded to the car making the best fuel consumption showing under the Chicago Motor Club formula. The tire prize goes to the tire concern whose product has fewest points against it. This trophy was donated by H. P. Branstetter, the Chicago Kisselkar agent.

FOURTEEN IN DESERT RACE

Los Angeles, Cal., Nov. 2—Special telegram—There are fourteen entries for the Los Angeles-Phoenix road race, which starts from this city at 10 o'clock Saturday night. The list of entries and drivers is as follows:

Pope-Hartford, Ruess and Tremains; Apperson, Harris Hanshue; Franklin, Hamlin and Irwin; Knox, Joe Nikrent; Kisselkar, Harvey Herrick; Ford, Roger Stearns; Velie, J. H. Stickney; Mercer, C. A. Biglow; Rambler, W. Sheriff; Durocar, A. Leutzenberg; Parry, Horine; Abbott-Detroit, Spiegel; Ohio, R. Henwood; Maxwell, C. Smith.

At the finish of the race at Phoenix there will be a track meet for contestants in the road race.

TESTS OF COMMERCIAL MOTOR VEHICLES



CHECKING STATION AT KENOSHA, NOON STOP ON CHICAGO-MILWAUKEE RUN

FINAL REPORT OF THE JUDGES OF CHICAGO MOTOR VEHICLE RUN

DIVISION 1-D, 500 POUNDS AND UNDER

Car No.	Car	Driver	Car Wt.	Gross Wt.	No. Cyls	Bore	Stroke	Road Day	Pen. 1st Day	Tech. 2nd Day	Ex. Ex.	Tot.
17	Brush	Taylor	1,360	1,896	1	4	5	0	0	0	0	0
6	Sears	Woodrich	1,150	1,660	2	4 1/2	4	0	3	0	0	3
5	Ranger	Pinkerton	4,020		2	5 1/4	4	159	Withdrawn			

DIVISION 2-D, 501 TO 1,000 POUNDS

2	Cino	Wight	2,980		2	4 3/8	5	0	0	1	1	
15	Sampson	Johnston	2,470	3,500	2	4 1/2	4	0	0	5	5	
4	Bulck	Easterday	2,690		2	4 1/2	5	0	0	5	5	
3	Bulck	Kunze	2,760	3,770	2	4 1/2	5	3	0	5	5	
11	International	Peterson	2,270		2	5	5	0	0	7	7	
1	Overland	McGlenn	2,360	3,175	4	3 3/4	4 1/2	0	0	11	11	
12	International	Sadlick	2,260		2	5	5	5	17	8	30	
10	Economy	Jenkins	2,350	3,480	2	5	4	16	15	35	66	
8	Hart-Kraft	Merillat	2,520	3,530	2					3	Withdrawn	
9	C. P. T.	Hayes	2,390	3,240	2	5	4	Withdrawn				
14	Sears	Kropp	1,330	1,830	2	4 1/2	4	Withdrawn				

DIVISION 3-D, 1,001 TO 2,000 POUNDS

19	Chicago Motor Wagon	Beckley	2,500	3,890	2	4 3/4	5	3	4	3	10	
37	Rapid	Carey	3,670	5,670	2	5 1/4	5	0	0	11	11	
16	Overland	Ditsler	2,895	4,900	4	4	4 1/2	11	0	1	12	
20	Utility	Gardien	3,740	5,850	2	4 1/2	5	15	0	1	16	
29	Randolph	Bensley			2	5 1/4	4 3/8	6	0	25	31	
28	Randolph	Kreet	3,960	6,180	2	5 1/4	4 3/8	33	0	0	33	
22	Marquette	Beck	2,750		2	5	4	13	23	0	36	
23	Randolph	Alberty	3,750	5,690	2	5 1/4	4 3/8	14	Withdrawn			
27	Chicago Com'l Car	Fleig	2,780	4,940	2	5 1/4	4	77	Disqualified			
25	Monitor	Manley	2,820	4,000	2	5	4 3/4	44	134	0	178	
26	Ranger	Dalton	2,400		2	4 1/4	4	Withdrawn				

DIVISION 4-D, 2,001 TO 3,000 POUNDS

31	Rapid	Anson	4,010	8,010	2	5 1/4	5	0	0	19	19	
30	Rapid	Schmidt	4,415	7,430	2	5 1/4	5	4	3	14	21	
34	U. S. Motor	Crego	3,630		2	5 1/4	4 1/2	0	0	31	31	
35	Buffalo	Morrall	4,330	7,460	4			6	183	0	189	
33	U. S. Motor	Schumard	3,590			5 1/4	4 1/2	0	Withdrawn			
32	Harder	Phillips	4,310	7,310		4 1/4	4 3/8	109	Withdrawn			

DIVISION 5-D, 3,001 TO 4,000 POUNDS

38	Grabowsky	Kallmeyer	4,340	8,310	2	5 1/2	5	0	0	1	1	
39	Mals	Mals	5,520	9,900	4	3 3/4	5 1/4	0	0	14	14	
40	Kelly	Edwards	5,780	10,010	4	4 3/8	5 1/8	31	2	0	33	
41	Le Moon	Le Moon	4,240	8,480	4			0	77	0	77	

DIVISION 6-D, 4,001 TO 6,000 POUNDS

51	Gramm	Haines	7,000	13,200	4	5	5	0	0	0	0	
44	Rapid	Robertson	9,315	15,345	4	4 3/4	5 1/2	3	0	0	3	
45	Kisselkar	Morse	6,770	12,280	4	4 1/4	4 3/8	8	0	7	15	
52	Alco	O'Mara	7,360	13,740	4	3 3/4	4 3/8	13	2	0	15	
47	Knox	Crane	7,130	13,450	4	5	4 3/4	11	0	8	19	
50	Kelly	Bennett	5,800	11,980	4	4 3/8	5 1/4	21	0	0	21	
48	Herman	Herman	7,140	13,160	4	5	6	12	3			
49	Kelly	Moffitt	6,240	12,500	4	4 3/8	5 1/2	12	Withdrawn			

DIVISION 7-D, 6,001 TO 10,000 POUNDS

56	Sampson	Lee	10,000	19,080	4	5	5 1/2	20	3	1	24	
55	Reliance	Blohm	8,105	15,105	3	5 1/8	5	0	41	0	41	
54	Reliance	Post	9,815	19,815	4	5	5 1/8	38	33	0	71	
53	Reliance	Withdrawn										

CHICAGO, Oct. 31—Manufacturers of commercial motor cars had their in-ning in the west last week, when a motor truck run to Milwaukee and return was held, with the Chicago American in the promoting role, assisted by the Chicago Automobile Club and the Milwaukee Automobile Club. Originally it had been planned to make the competition the same as that which has prevailed in other affairs of this sort, but wind and weather

MECHANICAL PENALTIES IMPOSED

No. 2 Cino—1 point for water leak in final examination; total, 1 point.

No. 6 Sears—3 points taking on gasoline.

No. 15 Sampson—5 points on brake test; total, 5 points.

No. 4 Bulck—1 point for a leaky line; 4 points for emergency brake; total, 5 points.

No. 11 International—5 points for leaky engine casting, 2 points for brakes; total, 7 points.

No. 1 Overland—11 points for brakes.

No. 12 International—5 points for replacing valve spring, 12 points adjusting and putting on fan belt, 5 points tightening fan belt, 8 points for brakes; total, 30 points.

No. 3 Bulck—3 points for taking on gasoline, 2 points for brakes; total, 5 points.

No. 10 Economy—11 points for motor stops, 10 points for repairing broken chain to jack shaft, 5 points for new bolts, and 5 points for work on same, 35 points for missing service brake; total, 66 points.

No. 8 Hart-Kraft—3 points for broken seal on radiator and taking on water.

No. 19 Chicago Motor—3 points for motor stops, 1 point for work done, 3 points tightening left front spring clip, 2 points for left front spring shifting, 1 point on brake test; total, 10 points.

No. 37 Rapid—2 points for right front spring hornbolt lost and left front spring leaves shifted, 9 points on brake test; total, 11 points.

No. 16 Overland—1 point for motor stop, 10 points for work done, 1 point on brake test; total, 12 points.

No. 20 Utility—15 points for work done, 1 point for loose lock nut; total, 16 points.

No. 29 Randolph—5 points for removing and work done on right brake rod, 1 point for replacing chain, 25 points for missing emergency brake; total, 31 points.

No. 28 Randolph—31 points for work on rear spring bolt, 2 points for work done; total, 33 points.

No. 22 Marquette—10 points for motor stops, 3 points for taking on oil, 23 points for motor stops; total, 36 points.

No. 23 Randolph—14 points for work done. Withdrawn.

HELD IN CHICAGO, NEW YORK AND BOSTON



ARRIVAL OF THE TRUCKS AND DELIVERY WAGONS AT NIGHT STOP AT MILWAUKEE

prevented this and converted the test into an out-and-out reliability run, with the economical features eliminated. The wind played such pranks with the confetti that many of the contestants lost the road at different points along the course, so that the officials of the contest declared it would be unfair to figure the gasoline and oil consumption when the distances varied to such an extent. Therefore, the awards were made by the technical commit-

tee on a road and technical examination.

Two of the fifty-one starters went through the test with perfect scores in both departments. One came in class 1D for cars of 500 pounds and under capacity—the Brush. The other perfect score car

was the Gramm, which won the 4,001 to 6,000-pound division. Thirteen of the contesting cars made perfect road scores as follows: No. 17 Brush, No. 6 Sears, No. 6 Cino, No. 15 Alden Sampson, No. 4 Buick, No. 11 International, No. 1 Over-

IN CHICAGO MOTOR TRUCK RUN

No. 27 Chicago Commercial Wagon—77 points for replacing and work done. Withdrawn.

No. 25 Monitor—1 point on oiler belt, 1 point for work on carburetor, 6 points for motor stops, 22 points for motor stop and work done on oiler, 3 points for taking on oil, 11 points for replacing and work done on set screws, 124 points for time and work on magneto and timer, 10 points for time lost; total, 178 points.

No. 31 Rapid—15 points for loose steering column, 4 points for brakes; total, 19 points.

No. 30 Rapid—1 point for motor stop, 6 points for taking on oil, 14 points for brakes; total, 21 points.

No. 34 U. S. Motor—20 points for sprung front axle, 11 points for brakes; total, 31 points.

No. 35 Atterbury—9 points opening hood for oil, 3 points for time and work done on carburetor, 3 points for taking on gasoline, 174 points for time; total, 189 points.

No. 38 Grabowsky—1 point for loose lock nut.

No. 39 Mals—7 points for broken spring clip, 7 points for brakes; total, 14 points.

No. 40 Kelly—28 points for work done and replacements, 3 points for taking on oil, 2 points for lost left front hubcap; total, 33 points.

No. 41 LeMoon—75 points for replacement and work done, 2 points for taking on gasoline; total, 77 points.

No. 44 Rapid—3 points for taking on gasoline.

No. 45 Kissel—8 points for replacement and work done, 1 point for loose lock nut, 1 point for lost magneto timer support, 1 point for loose bracket rod, 3 points for brakes, 1 point for loose bracket bolt; total, 15 points.

No. 52 Alco—2 points for time adjusting carburetor, 13 points for work done.

No. 47 Knox—3 points for taking on water, oil and gasoline, 8 points for work done, 8 points for brakes; total, 19 points.

No. 50 Kelly—21 points for work done.

No. 48 Herman—15 points for work done.

No. 49 Kelly—12 points for work done.

FINAL REPORT OF THE JUDGES OF BOSTON MOTOR VEHICLE RUN

CLASS A—1,000 POUNDS AND LESS							
No	Name	Weight Carried	Comput'n Weight	Gals. Gasoline	Pints Cyl. Oil	Total Cost	Cost per Ton Mile
11	Warren-Detroit	1,320	1,000	9	1½	\$1.53	\$0.0248
47	L. H. C.	1,000	1,000	11	9	2.32	.0386
3	Hart Kraft	1,040	1,000	13½	8¾	2.71	.0450
19	*Metz	460	500	9½	2	1.65	.0548
18	*Metz	460	500	14	7	2.68	.0892
44	*Reliance	1,120	1,000	12½	8	2.50	.0416
CLASS B—1,001 TO 3,000 POUNDS							
13	Franklin	3,060	2,000	4¾	1¼	.82	.0068
4	Atterbury	3,260	3,000	13½	2½	2.32	.0128
23	Victor	3,060	3,000	16	5	2.47	.0158
21	Wilcox	3,135	3,000	16¼	8	3.10	.0172
8	Rapid	2,200	2,000	10½	7½	2.15	.0179
2	Rapid	2,160	2,000	13	11	2.77	.0230
9	McIntyre	2,120	2,000	15	9½	2.99	.0249
CLASS C—3,001 TO 5,999 POUNDS							
34	Frayer-Miller	4,320	4,000	22½	13	4.41	.0184
29	Garford	4,310	4,000	29½	14	5.60	.0233
28	Garford	4,160	10,000	34¼	15	6.42	.0107
CLASS D—6,000 TO 8,000 POUNDS							
32	Frayer-Miller	6,310	6,000	18½	5½	3.30	.0091
33	Frayer-Miller	5,115	6,000	20¾	5	3.63	.0100
35	Johnson	6,140	6,000	22	10	4.15	.0115
30	Alco	6,320	6,000	23¾	12	4.55	.0126
6	Knox	8,245	8,000	39	6½	6.65	.0138
CLASS E—10,000 POUNDS							
26	Morgan	10,220	10,000	34¼	15	6.42	.0107
24	Sampson	10,560	10,000	40	8	6.90	.0115
PRIVATE OWNERS							
CLASS B							
41	Autocar	3,240	3,000	9¾	5	1.87	.0103
1	Autocar	3,780	3,000	11¾	8	2.38	.0132
17	Rapid	2,220	2,000	10	8	2.10	.0175
40	Gramm	4,320	3,000	20¾	5	3.55	.0196
CLASS C							
43	Frayer-Miller	5,660	5,000	21½	7½	3.91	.0130
CLASS E							
49	Mack	6,160	10,000	20	21	4.51	Not full load

* Road penalty. 44—164 points. 19—38 points. 18—10 points. All others clean. Gasoline figured at a uniform rate of 16 cents per gallon. Cylinder oil figured at a uniform rate of 50 cents per gallon. Number of miles covered—120.



GRAMM, PERFECT ROAD AND TECHNICAL SCORE IN CHICAGO RUN



RAPID, WINNER OF 2001-300 POUND CLASS IN CHICAGO RUN



BIG ALCO TRUCK ON ITS WAY TO MILWAUKEE IN THE CHICAGO AMERICAN TEST

land, No. 37 Rapid, No. 31 Rapid, No. 34 U. S. Motor, No. 38 Grabowsky, No. 39 Mais, and No. 51 Gramm. Surviving the technical examination with clean records were the No. 17 Brush, No. 6 Sears, No. 40 Kelly, No. 51 Gramm, No. 44 Rapid, No. 52 Alco, No. 50 Kelly, No. 55 Reliance, and No. 54 Reliance.

There were seven divisions in all. The Brush won in division 1D. The Cino won the 501 to 1,000 with 1 point against it, that one point being for a slight leak in water pump. The Chicago Motor wagon with 10 points against it captured the 1,001 to 2,000-pound class, while the No. 31 Rapid with 19 points was declared winner of the 2,001-3,000 division. No. 38 Grabowsky, winner of the 3,001-4,000-pound class, like the Cino, had only 1 point demerit, which point was given for a loose radius rod lock nut. The Gramm made a perfect score in the 4,001-6,000-pound division, while in the 6,000-10,000-pound class No. 56 Alden Sampson won with 24 points.

The test attracted fifty-seven entries, but six of them were withdrawn at the last minute, leaving fifty-one starters. Each of these machines was loaded to its full catalog weight capacity, but despite this handicap forty-five of them checked in at Milwaukee on time and forty of them reached Chicago Saturday in time for the brake and clutch test. The cold weather that prevailed on Friday proved a great hardship, there being an icy wind blowing from the lake, which so chilled the contestants and officials that many of the observers became so cold they could not note penalties on their observers' cards. The wind also played havoc by blowing away the confetti, so that it was little wonder that many of the cars got off the course.

The Alco suffered some in this respect and because of losing its way traveled 40 miles more than did the others. When the truck reached Kenosha it was discovered that it had taken the wrong road, so the driver pluckily returned to where he had lost the course, which accounts for the 40 additional miles the truck traveled.

The officials did not penalize the Alco for this. Neither did they inflict punishment upon the big Alden Sampson for being late at Milwaukee, because the driver had a good excuse. He was bringing up the rear of the procession entering Milwaukee when a flimsy wooden bridge over which he was passing broke under the weight of the Alden Sampson, largely because the structure had been weakened by passing over it of so many heavily loaded vehicles. It took a long time to get the Alden Sampson on the road again, but this was finally accomplished and the big truck reached Milwaukee.

The Randolph played in tough luck. A couple of chunks were cut out of one of its solid tires and the bumping that followed caused brake trouble which brought penalization. The trouble, however, was directly due to the tires, but there was nothing in the rules to save the penalties.

The mileage of the first day was 108 miles, and on the second day the odometers showed 104. The start and finish of the run in Chicago was at the Plew garage at Wabash avenue and Twenty-sixth street, while in the Cream City the Milwaukee Automobile Club assisted in caring for the contestants. The trucks were parked for the night in Milwaukee in the basement of the Auditorium.

While, of course, it was very disappointing that the gasoline consumption was not taken into consideration in making the awards, thus depriving the business world of an opportunity to draw comparisons as to the cost of operation, still the test can be considered quite successful in that it demonstrated the speed and reliability of the vehicles and also showed the entrants whose cars were penalized wherein lay the weakness of their products. The work was new to the officials who had the run in charge, but they have learned so much that when another commercial reliability is held in Chicago they will be able to handle the proposition in the best possible manner.



BRUSH, PERFECT ROAD AND TECHNICAL SCORE IN CHICAGO RUN



GRABOWSKY TRUCK, WINNER OF 3001-4000 POUND CLASS IN CHICAGO RUN



MAYS MOTOR TRUCK TRAVELING AT SPEED ON RETURN TRIP FROM MILWAUKEE IN CHICAGO TEST



CHICAGO-MILWAUKEE RUN—KISSELKAR AND OTHERS HELD UP BY A TRAIN



CHICAGO MOTOR WAGON, WINNER OF 1001-2000 POUND CLASS IN CHICAGO RUN



SEARS WHICH MADE A FINE SHOWING IN CHICAGO-MILWAUKEE RUN

New York Not Ready

NEW YORK, Oct. 31—Successful in every way proved the truck run conducted by the New York American Friday and Saturday of last week. There were forty-nine starters in the various classes of the contest, of which twenty-seven completed the scheduled course with perfect road scores. One dozen of the gasoline cars were penalized for work on the run and of these only four reported mechanical troubles. Only two of the electrics suffered mechanically, but ten were given varying numbers of demerits.

The chief difficulty experienced in both classes of trucks was the shortage of gasoline and current, which accounted for nine penalizations, six among the electrics and three among the gasoline cars. Two gaso-

ROAD PENALTIES IMPOSED IN

MANUFACTURERS' CARS; GASOLINE; TRANSFER CLASSES; DIVISION 1; 1,000 POUNDS AND UNDER

No.	Car	First day	Second day
1	Chase	0	0
2	Hatfield	0	0
3	Hatfield	0	0
4	Brush	Dis.; wrong route	
DIVISION 2; 1,001 TO 3,000 POUNDS			
5	Grabowsky	Dis.; taking oil	
8	Victor	0	422
9	Atterbury	0	0
DIVISION 3; 3,001 TO 5,000 POUNDS			
10	Renault	0	0
11	Walter	Dis.; wrong route	
12	Kelly	0	0
DIVISION 4; 5,001 TO 8,000 POUNDS			
16	Alco	0	0
19	Grabowsky	0	0
20	Knox	0	Withdrawn; burned connecting rods
21	Kelly	11	Ignition XX; Dis.; taking gas
22	British-Atlas ..	0	20 magneto
23	Alden-Sampson ..	37	Adjustment 0
DIVISION 5; 10,000 POUNDS AND OVER			
24	Hewitt	Dis.; taking gas	
25	Morgan	0	0
26	Gaggenau	Dis.; taking gas	
DISTRIBUTING CLASSES; GASOLINE VEHICLES; DIVISION 1; 1,000 POUNDS AND UNDER			
28	Brush	0	0
29	Hart-Kraft	0	0
DIVISION 2; 1,001 TO 3,000 POUNDS			
7	Cass	0	Withdrawn; broken bearing
30	Monitor	0	0
32	Grabowsky	Dis.; missed stops	
34	Grabowsky	0	0



BIG TRUCKS MAKE GOOD PROGRESS IN CHICAGO-MILWAUKEE RUN

With Official Results

line cars missed the course and were disqualified; another missed some of the controls and the final demerited car suffered magneto troubles. The other electrics to lose their clean scores were charged with being late and failure to finish the route.

The run was about 65 miles a day for the transfer divisions and from 30 to 45 miles a day for the delivery divisions. The first day's course was laid out through the streets of the city to Westchester county and the second was on Long Island around the aviation field and return.

The officials still are figuring out the relative expenditure of gasoline, oil and current for the various entrants and the winners of the sweepstakes and class events will be announced in due course.

NEW YORK COMMERCIAL RUN

MANUFACTURERS' CARS; ELECTRICS;
TRANSFER CLASSES; DIVISION 1;
1,000 POUNDS AND UNDER

- | | | | |
|----|-----------------------------------|--------------------------|---|
| 37 | General vehicle 92 | Work | 0 |
| | DIVISION 2; 1,001 TO 3,000 POUNDS | | |
| 38 | General vehicle. | Dis.; taking current | |
| 39 | Lansden | Withdrawn; short circuit | |

DISTRIBUTING CLASSES; DIVISION 2;
1,001 TO 3,000 POUNDS

- | | | | |
|----|---|----------------------|---|
| 44 | Lansden | | 0 |
| | OWNERS' DIVISION; ELECTRIC DISTRIBUTING CLASS; DIVISION 1; 1,000 POUNDS AND UNDER | | |
| 47 | General vehicle. | Dis.; taking current | |

DIVISION 2; 1,001 TO 3,000 POUNDS

- | | | | |
|----|------------------|---------|---|
| 40 | Lansden | | 0 |
| 41 | General vehicle. | 31 Late | 0 |

DIVISION 3; 3,001 TO 5,000 POUNDS

- | | | | |
|----|------------------|----------------------|---|
| 42 | General vehicle. | | 0 |
| 43 | General vehicle. | Dis.; taking current | 0 |

DIVISION 4; 5,001 TO 8,000 POUNDS

- | | | | |
|----|------------------|----------------------|---|
| 45 | Lansden | | 0 |
| 46 | General vehicle. | Dis.; taking current | |

DIVISION 5; 10,000 POUNDS AND OVER

- | | | | |
|----|------------------|--|---|
| 48 | General vehicle. | | 0 |
| 49 | General vehicle. | | 0 |

OWNERS' DIVISION; GASOLINE; DISTRIBUTION CLASS; DIVISION 2;
1,000 TO 3,000 POUNDS

- | | | | |
|----|------------------|----------------------|---|
| 50 | General vehicle. | | 0 |
| 51 | General vehicle. | Dis.; taking current | |

DIVISION 3; 3,001 TO 5,000 POUNDS

- | | | | |
|----|------------------|----------------------|---|
| 52 | General vehicle. | Dis.; taking current | |
| 53 | General vehicle. | | 0 |

DIVISION 4; 5,001 TO 8,000 POUNDS

- | | | | |
|----|------------------|--|---|
| 54 | General vehicle. | | 0 |
| 55 | Commercial | | 0 |

DIVISION 5; 10,000 POUNDS AND OVER

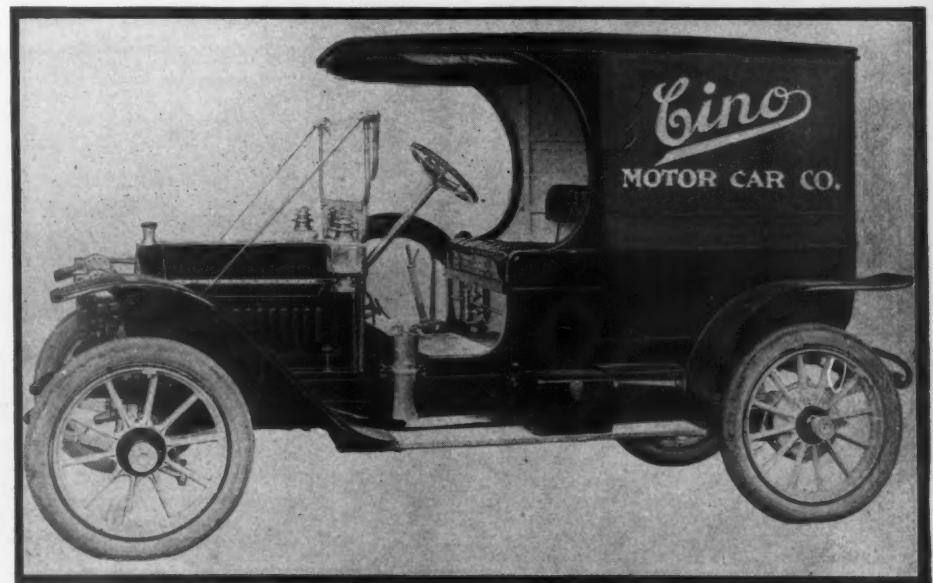
- | | | | |
|----|------------------|--|---|
| 56 | General vehicle. | | 0 |
| 57 | General vehicle. | | 0 |

OWNERS' DIVISION; GASOLINE; DISTRIBUTION CLASS; DIVISION 2;
1,000 TO 3,000 POUNDS

- | | | | |
|----|------------------|--|---|
| 58 | General vehicle. | | 0 |
| 59 | General vehicle. | | 0 |



ALDEN SAMPSON, WINNER OF 6001-10,000, POUND CLASS IN CHICAGO RUN



CINO, WINNER OF 501-1000 POUND CLASS IN CHICAGO RUN.

Three Days of Racing at Dallas

DALLAS, TEX., Oct. 29—Favored with large attendance, ideal weather and a banked track that was in first class shape for fast driving, the 3-day meet held under the auspices of the Dallas Automobile Dealers' Club was brought to a close today.

George Clark, a local driver of merit, showed the way to all comers on the first day of the meet. By his skilful and clever driving of the Cutting he won three out of four races on the card. Tobin De Hymel in a Stoddard, fresh from his recent victories in the east, would have been a most dangerous competitor, but tire troubles put him completely out of the running on the first day of the meet. Others who drove with skill and daring were the Endicott brothers with Cole cars, Fred Malone in a model 10 Buick, and Phil Wells with his two Moon cars.

De Hymel came into his own on the second day of the meet. His car was so fast that he never was in danger, and he easily added to his already long list of victories the first two events on the program, and was leading by a wide margin in the hour race, when it was called on account of accidents to the Renault and Moon cars.

The hour race brought out some of the most powerful cars in this section. Gaston Morris, driver of Guy Waggoner's Renault racer, lost control of his car in the early stage of this race, and the car, moving at a terrific clip, crashed through the inner fence, and turned over three times. Morris was thrown clear of the dangerous trap, but A. Cash, his mechanic, was buried beneath the wreck. He died some few hours later from his injuries.

P. Wells, driving a Moon, went through the fence on the forty-sixth mile of this race, and was seriously though not fatally injured. The race was called here with De Hymel the winner in 46:00 flat.

The feature event on the last day of racing was the 50-mile free-for-all Dallas Derby. Four cars faced the starter in this event—De Hymel in a Stoddard, the Endicotts in Cole cars, and the Cutting with Clark at the wheel. De Hymel at the pistol started out at a terrific clip to cinch the race in the early running, closely followed by B. Endicott in a Cole, with the Cutting taking the going easy. De Hymel, with Clark running second, retained his lead until the nineteenth lap, where he was forced to stop at the supply pit to change spark plugs.

At this stage of the race Clark in his Cutting jumped to the front, and ran two fast laps in the Stoddard and was still leading in the twenty-fifth mile when the cars were stopped by the technical committee of the local club for 5 minutes in order that tires might be examined. The race was resumed after 5 minutes intermission, Clark leading until the fortieth lap when engine troubles put him out of the running for fair. The Cole cars never

were dangerous, being lapped several times by the Stoddard and Cutting. However, they ran consistently and took second and third. De Hymel, the winner of this race, did the 50 miles in 56:10. Summaries:

FIRST DAY

Mile time trials, stock chassis, 300 cubic inches and under; Clark, Cutting, won, time 1:00½; Wells, Moon, second; Endicott, Cole, third.

Ten-mile stock chassis, class B, 230 cubic inches and under; Fred Malone, Buick, model 10, won, time 10:43½; H. Endicott, Cole, second; B. Endicott, Cole, third.

Five miles, class D, free-for-all; Clark, Cutting, won, time 5:27½; H. Endicott, Cole, second; B. Endicott, Cole, third.

Fifty-mile stock chassis, class E, 600 to 450 cubic inches; Clark, Cutting, won, time 52:38; Wells, Moon, second; B. Endicott, Cole, third.

SECOND DAY

Ten-mile free-for-all handicap, class D; DeHymel, Stoddard-Dayton, scratch, won, time 9:51½; Clark, Cutting, second; B. Endicott, Cole, third.

Ten-mile free-for-all, class D, DeHymel, Stoddard-Dayton, won, time 10:02; Wells, Moon, second; Clark, Cutting, third.

One-hour race, free for all, stripped chassis, class C; stopped in forty-sixth lap, due to accident; new start; won by DeHymel, Stoddard-Dayton, time 46:00; Wells, Moon, second; Clark, Cutting, third.

Time trials, free for all, class E, state championship, fast mile trial, driving 3 miles, fastest mile to count; Stoddard-Dayton won, time 1:02; Clark, Cutting, withdrew.

Five-mile free-for-all handicap, class B; Clark, Cutting, won, time 5:05½; Malone, Buick, model 10, second; B. Endicott, Cole, third.

Ten-mile stock chassis, class B, 300 cubic inches and under; Clark, Cutting, won, time 6:14; B. Endicott, Cole, second; H. Endicott, Cole, third.

Fifty-mile Dallas Derby, stripped chassis, class E; DeHymel, Stoddard-Dayton, won, time 56:10; B. Endicott, Cole, second; H. Endicott, Cole, third.

GOSSIP FROM DETROIT

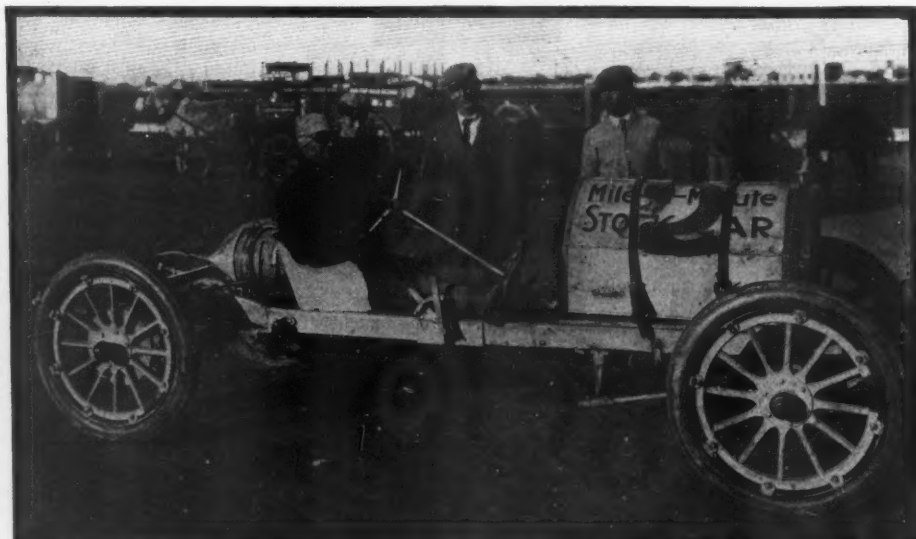
Detroit, Mich., Oct. 31—The most interesting bit of news to local motorists the past week was the announcement that the Detroit Motor Club and the Wolverine Automobile Club had decided to consolidate, the name of the latter being retained. Committees from the two organizations have been at work on the matter for some little time and the details have just been completed. The combined membership is about 600, which, it is expected, will be increased to 1,000 within a very few weeks. Secretary F. H. Trego and

Assistant Secretary W. O. Peck have established temporary offices at 1215 Woodward avenue. The club plans to erect one of the finest club houses in this section of the country.

William F. Cornell, of the Detroit Motor Car Supply Co., has been elected president of the Detroit Rotary Club, a new organization representing forty-five business and manufacturing concerns of Detroit, with an investment of over \$7,000,000. It has been formed as a branch of the National Association of Rotary clubs, with headquarters in Chicago. The object, as stated, is to promote the business interests of its members and to take an active part in the civic growth and welfare of the cities represented. Only one firm in a given line of business is permitted to become a member. At the next meeting of the local club, Thursday evening, the members will be addressed by Paul P. Harris, of Chicago, president of the national body.

Mayor Philip Breitmeyer, who retires from office January 1, and his secretary, Frederick A. Van Fleet, are president and secretary-treasurer, respectively, of the Wolverine Motor Supplies Co., which has filed articles of association at Lansing and has already commenced operations at 1221 Woodward avenue. The company's principal output, for the present, will be the Detroit spark plug, invented by Theodore L. Beguhn. It differs widely from the ordinary spark plug in that mica washers take the place of the customary wire points for sparking purposes. Frank W. Kanter is vice-president of the company and George W. Stimpson is factory manager. John Gillespie, of the Gillespie Autosaes Co., also is prominently interested in the new venture.

Following the recent annual meeting of the Warren Motor Car Co., General Manager J. C. Bayerline has announced that the capital stock of the concern has been increased from \$100,000 to \$300,000. Whether this means a stock dividend or a further enlargement of the company's facilities is not made known.



GEORGE CLARK IN CUTTING, A STAR AT DALLAS

The Hupmobile around-the-world tour will start from here next Thursday or Friday. Joseph R. Drake and Tom Jones, two members of the crew, were in New York all last week getting information from route experts. On leaving here the party will head direct for Denver. The tours department of the Automobile Club of America has mapped out the foreign route.

The horse vs. motor car contests conducted by the United States Motor Co. with such success in the east recently, will be continued in this city, beginning today and lasting 2 weeks. The contest here will be in charge of Paul McKenny.

The board of commerce is doing some effective campaigning on behalf of its good roads bonding project. George S. Ladd, former master of the Massachusetts state grange and now lecturer for the National Grange is delivering a series of good roads talks here under the auspices of the board, addressing the men in the factories for the most part. He will visit the rural districts and stir up the farmers. Being one himself, he knows just how to reach them.

PASSES ON WHEEL TAX

Washington, D. C., Nov. 1—Special telegram—In deciding the appeal of Leroy Mark, former secretary of the Automobile Club of Washington, from the decision of the district supreme court, denying a writ of certiorari to review the action of Assessor Richards in charging a wheel tax on motor cars the court of appeals, in an opinion by Chief Justice Shepard today, declined to pass on the validity of the tax. The court held it would be time enough to consider that question when the collector of taxes distrained for the tax. A writ of certiorari is not the proper remedy in this case, the court held, and suggested Mark had a remedy at law. Congress enacted a law levying a wheel tax here, but it never has been enforced, as no penalty was provided for failure to pay the tax.

Walls in Maxwell Again a Winner

WASHINGTON, D. C., Oct. 28—For the second time this year Harry E. Walls, driving a Maxwell, won the sweepstakes trophy in a reliability contest. His recent victory in the Munsey historic tour made him the logical favorite in the 5-day reliability tour of the Washington Post to Richmond and return, and he made good by winning the trophy in division 3A and the sweepstakes. A total of 13 points was marked against his car, 3 of them being for stalled motor and 10 in the final examination. The award was promptly protested by A. G. Carter, entrant of one of the Washington cars, who claimed excessive penalties were laid against his car. Mr. Carter had a wordy argument with R. B. Caverly, representative of the A. A. A., and the Washington entries were thereupon disqualified. The whole matter has been referred to the contest board for decision. The winners of the other classes were: Division 1A, Maxwell, B. Robertson; division 2A, Buick, S. Mortimer; division 4A, Washington, W. D. Arrison; division 5A, Columbia, G. M. Wagner.

The two Maxwells, two Washingtons and the Parry had perfect time scores. The final examination report:

Maxwell—Fan belt off, 1 point; one lost cap screw from magneto distributor, 1 point; one loose cap screw from magneto distributor, 1 point; loose right rear fender, 2 points; two bent brake band brackets, 5 points; road penalty, 3 points; total, 13 points.

Washington—Loose left rear fender, 2 points; foot brake, 8 points; emergency brake, 10 points; road penalty, 2 points; total, 22 points.

Washington—Lost grease cup, left rear axle, 2 points; lost truss rod under rear axle, 25 points; foot brakes, 3 points; road penalty, 1 point; total, 31 points.

Maxwell—Loose spark terminal, 1 point; loose yoke on steering column, 15 points; broken leaf in left front spring, 5 points; loose left-hand short brake lever, 25 points; loose left front fender bolt, 2 points; one tappet rod spring loose, ½ point; one tappet rod spring lost, ½ point; one loose right-hand front axle bolt, 2 points; two loose body bolts, 2 points; road penalty, 8 points; total, 61 points.

Buick—Front wheels sprung ¾ inch, 30 points; loose front gas lamp bracket, 2 points; time penalty, 52 points; road penalty, 15 points; total, 99 points.

Buick—Loose steering column, 15 points; loose sprocket on jackshaft, left side, 50 points; distance rod nut left and right side, 2 points;

foot brake, 30 points; time penalty, 8 points; road penalty, 2 points; total, 107 points.

Columbia—Two loose cap screws on exhaust and intake manifold, 2 points; one broken spring clip, left rear spring, 15 points; one broken truss rod under rear axle, 25 points; five leaves broken in right front spring, 25 points; five leaves broken in left front spring, 25 points; loose mud apron, 2 points; nut off transmission cover, 1 point; loose set nut on connecting link of throttle linkage, 1 point; brass binding on dash loose, 1 point; ¼ inch of spread rear wheels, 20 points; foot brake, 48 points; hand brake, 26 points; road penalty, 22 points; total, 211 points.

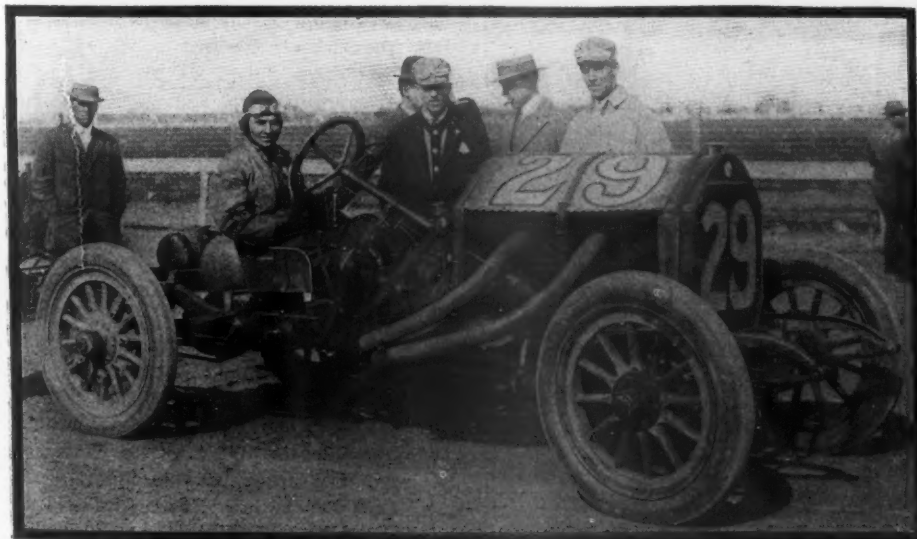
Parry—Loose right front fender, 2 points; loose rear right fender, 2 points; bent left front fender, 2 points; left front spring leaves out of line, 2 points; right front spring leaves out of line, 2 points; base of steering column loose at dash, 15 points; gasoline strap loose, 2 points; brake band guide bent, 2 points; stud loose on transmission cover, 1 point; truss rod on rear axle loose, 5 points; loose muffler, 2 points; front axle bent back, 150 points; spread of rear wheels, 95 points; emergency brake, 17 points; time penalty, 58 points; road penalty, 205 points; total, 562 points.

Washington—Loose left front fender, 2 points; loose strut rod under rear axle, 5 points; loose right front deck, 1 point; loose right front fender, 2 points; spread of front wheels, 5 points; foot brake, 3 points; time penalty, 625 points; road penalty, 328 points; total, 971 points.

BOSTON TRUCK RESULTS

Boston, Mass., Oct. 29—The Bay State officials who handled the Boston American's truck run finished their labors during the week and made their announcement of winners. The best record for the tour was made by a Franklin, which competed in class B, making the total distance of 118 miles on 4½ gallons of gasoline and 1¼ pints of oil at a total cost of 82 cents, giving a per ton mile of .0068 cents. A protest was lodged against the Franklin, but this was not allowed by the referee, Harry Knights. It was based on three things: First, that it was catalogued at 1 ton and carried 2900 pounds; secondly, that the carburetor equipment was not similar to the specifications; thirdly, that the body was not regular. The decision has been appealed to the A. A. A. contest board, and if it is not sustained it will give first place to the Atterbury in that class, provided the protest lodged against the latter is overruled. This protest has not been decided yet by Referee Knights. This is based on the tonnage capacity.

Alvan T. Fuller, with one of the 3-ton 24-horsepower Packard trucks, created a new record for commercial vehicles, which eclipsed some of those made a week ago in the Boston American's endurance run, when he covered the same course—a little more than 8 hours—that was given 2 days by the newspaper, and at a cost of \$2.94, which is less than any of the competitors in the class below and the same class as the Packard in the newspaper run. The truck was loaded up with lead, then a touring car body was put on and eleven men were carried, making 675 pounds more than the 3 tons capacity. Approximately 20 gallons of gasoline were used and 1 gallon of oil. This gave an average of close to 6 miles to a gallon of gasoline. The figures showing the mileage for each hour during the run are interesting. In the first hour it was 15½.



TOBIN DE HYMEL IN STODDARD AT DALLAS MEET

REVIEW OF 1910 ROAD RACING IN EUROPE

WITH the running of the Normandie cup race in France about the middle of October the limited European road-racing season came to an end. So far as the events were concerned 1910 was an exact duplicate of 1909, the same fixtures which were contested last year being repeated, and with about the same makes of cars as contestants. This year, however, France did not have the walkover it did in 1909, its supremacy being disputed by the Spaniards, who might be justly called the dark horses of the continental sport. A year ago the Lion-Peugeot won five of the eight races that were the European card, whereas this year it had to be content with three victories. But those three wins were well worthy of the effort, as they demonstrated the wonderful speed of the little French voiturette.

*Probably the most sensational race of the year on the other side of the water was the Normandie cup in which Goux in a two-cylinder Lion-Peugeot averaged 67.8 miles per hour for 191.3 miles. The car he drove was one with a bore of 3.1 and a stroke of 10.2 inches. In this same race Goux beat his teammate, Boillot, who drove a four with a bore of 2.5 and 11 inches stroke. That the four was fast was shown by the fact that on one of the rounds Boillot averaged 73.9 miles per hour on his Lion-Peugeot.

The season in Europe opened May 16, when the Sicilian contests were run. One of these was the historic Targa Florio, formerly one of the greatest European races, but now only a travesty. At the same time, there was contested a voiturette cup event, which was won by Boillot in a Lion-Peugeot, who easily outfooted Cariolato in a Franco, who won the Targa Floria. The speed of this race was slowed by the mountainous course over which it was run and the 35.2 miles per hour of Boillot was 8 miles an hour faster than that shown

by Goux in the same race a year ago. That the class of the Targa Florio suffered is shown by the fact that when Ciuppo in a S. P. A. won a year ago, he averaged 34.2 miles per hour, as against Cariolato's 29.6. On May 29 the Catalogne cup race was run in Spain and Goux and Guippone in Lion-Peuegots ran one, two, with Chas-saigne in a Hispano-Suiza third. Goux averaged 49.2 miles per hour.

Then there came a gap in the program and it was not until September that the racers got busy again. On September 6 the Ostend voiturette race was run in Belgium and it proved a surprise party, in that Zuccarelli in a Hispano-Suiza won over Boillot in a Lion-Peugeot and Pilliverdie in a Hispano-Suiza. At the same time there was disposed of three old cups, the Liederkerke, Ostend and William. It was a walkover for Coosemans in an Excelsior, who captured all three cups.

The event race of the year, so far as Europe is concerned, was the voiturette race at Boulogne, which was of international caliber in that it attracted fourteen starters, of which six finished. Zuccarelli in a Hispano-Suiza, a four-cylinder proposition, defeated Goux in a Lion-Peugeot and averaged 55.5 miles per hour. It was in the practice preceding this race that Guippone was killed. This same race in 1909 was won by Guippone at an average speed of 47.5 miles per hour, with Goux second.

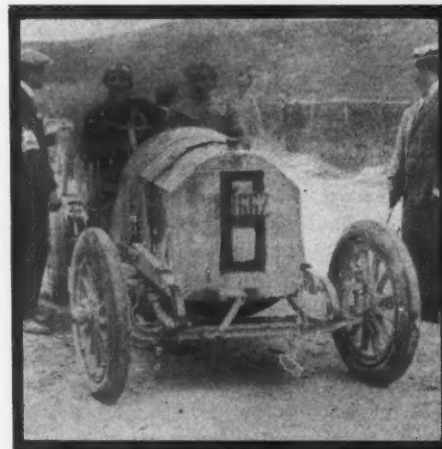
That the interest in road racing in Europe, so far as the manufacturers are concerned, suffered in comparison with 1909 is shown by glancing at the statistics of the respective years. In 1909 these same races attracted sixty-seven starters, while only thirty-eight went to the post this year. There is every indication, however, that 1911 will see a grand revival in road racing in Europe. The French evidently have felt the pinch, for now

there is pending before the Automobile Club of France a recommendation from the Chambre Syndicale de l'Automobile, made up of the leading manufacturers of France, which is petitioning for either a big road race or an important touring competition next season. It is more than probable that the Automobile Club of France will take up the racing proposition and put on an event which will give the French an opportunity to demonstrate the speed and stamina of their products.

RACING AT OMAHA

Omaha, Neb., Oct. 31—A big audience saw one of the best racing cards of the year at the Omaha speedway Sunday, when the Omaha Motor Club's last meet of the season was held. A feature was the 3-mile race for women. Mrs. H. H. Blodgett in a Cadillac crossed the line less than 3 feet ahead of Miss Bessie Amos in a Hudson.

In the 10-mile event with five entries, Walter Smith, driving a Henry, appeared to have the race well in hand, having a



CARIOLATO IN FRANCO



GOUX IN TWO-CYLINDER LION-PEUGEOT

lead of over 200 feet over all competitors as the last mile of the race was commenced. Then, at the first quarter of a mile west of the starting point, the steering post came out, making the car unmanageable, and the left front wheel was broken off. The car went hurtling through the air and landed on Smith, who was picked up unconscious but was not seriously injured. On the same turn, Walter Peterson, mechanician for F. E. Fredrickson's Chalmers, lost his grip as he was standing out on the step to steady the car, and rolled along the turf for a considerable distance, but was not badly hurt. The two accidents put the two cars out of the running and Al Merrill's Chadwick won the race in 12:11, Nygard's Cadillac being second.

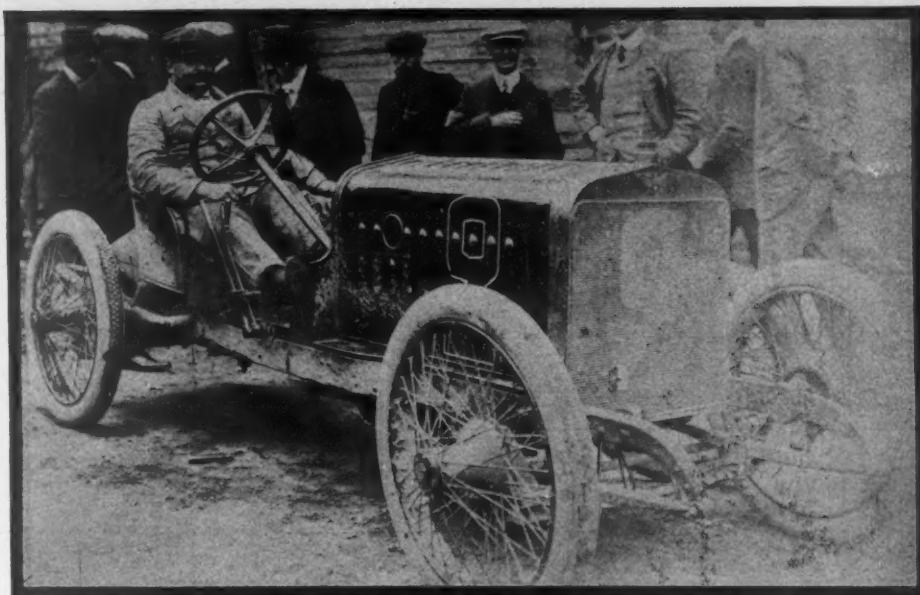
In the 5-mile event, open to cars costing under \$2,000, George Reim in a Cadillac took first place in 5:42%. Otto Nestman, driving a Lexington, was second in 6:04 flat. Fred Bruner in a Hudson was third.

In a 1-mile dash, flying start for the track record and the Rome Miller cup,



the attempt to lower the record proved futile from an official standpoint, although George Reim in a Cadillac and Al Merrill negotiated the distance in 1:06 flat, which is 1 second faster than the official record. The performance was protested by E. V. Richenbacher, who holds the track record of 1:07 in a Firestone-Columbus. Richenbacher's protest held. He declared that under the condition he was forced to meet when he made the record, he had to race in company with others and was permitted to take a flying start of but 200 yards, whereas both Reim and Merrill had a flying start of 1 mile. All entrants therefore were compelled to make the trial over again in company and the best time made was by H. E. Fredrickson in 1:08. Reim came second and Nestman third. Richenbacher thus keeps the trophy for the track record for this season.

The last event was the big contest for the speedway trophy valued at \$500. It was a 15-mile free-for-all and was won by H. E. Fredrickson in a Chalmers in 17:50. George Reim in a Cadillac was second. A. C. Merrill, in his Chadwick, quit after the fourth mile because his car



ZUCCARELLI IN HISPANO-SUIZA

caught fire, due to leaking gasoline. The car burned like a big bonfire until the spectators came to the rescue and extinguished the flames by throwing dirt on the burning mass. Summary:

Ten miles—Merrill, Chadwick, won, time 12:11; Riem, Cadillac, second.

Five miles—Riem, Cadillac, won, time 5:42½; Nestman, Lexington, second; Bruner, Hudson, third.

Two-mile trials for Rome Miller trophy—Fredrickson, Chalmers, won, time 1:08.

Three miles for women—Mrs. H. H. Blodgett, Cadillac, won, time 3:51½; Miss Bess Amos, second; Mrs. Eugenie Silvers, third.

Fifteen miles—Fredrickson, Chalmers, won, time 17:50; Riem, Cadillac, second.

QUAKERS' SHOW PLANS

Philadelphia, Pa., Oct. 29—Philadelphia's show, to be conducted under the auspices of the Philadelphia Automobile Dealers' Association, will be held in the armory of the Third Regiment, N. G. P., Broad above Wharton street, January 14 to 28, 1911. The idea of holding a 2-week show originated in Philadelphia last year

and was attended with so much success that other cities are adopting this plan. If the preliminary applications for space are any criterion, Philadelphians are promised a treat in the way of motor vehicles. The show will be divided into two sections—the initial week being devoted to all leading makes of gasoline pleasure cars now manufactured in America, in factories licensed under Selden patent. The second week of the exhibition will present a miscellaneous assortment, comprising, as it will, all the gasoline pleasure cars that may not get an opportunity, through lack of space, to show the first week; complete lines of electric pleasure vehicles, commercial vehicles, motor cycles and accessories. The committee in charge comprises: J. A. Wister, president of the Philadelphia Licensed Automobile Dealers' Association, assisted by W. F. Foss, of Foss & Hughes, and E. B. Jackson.



BOILLLOT IN PEUGEOT FOUR

RESULTS OF ROAD RACES RUN IN EUROPE DURING SEASON OF 1910

Race	Date	Car	Driver	No. Starters	No. Finishes	Distance	Time	M. P. H.
Normandie Cup.	Oct. 12	Lion-Peugeot, 2-cyl.	Goux	3	2	191.3	2:49:14½	67.8
France	Second	Lion-Peugeot, 4-cyl.	Boillot				2:50:06½	67.4
1909 winner	August	Lion-Peugeot, 1-cyl.	Boillot	8		208.8	3:11:27	65.4
Boulougne Cup.	Sept. 18	Hispano-Sulza	Zuccarelli	14	6	282.5	5:04:50	55.5
France	Second	Lion-Peugeot	Goux				5:21:50	51.1
	Third	Hispano-Sulza	Chassagne				5:30:45	50.2
	Fourth	Lion-Peugeot	Boillot				5:36:36	50.0
1909 winner	June 26	Lion-Peugeot, 1-cyl.	Guilppone	15		282.6	5:65:29	47.5
Catalogne Cup.	May 29	Lion-Peugeot	Goux	7	3	210	4:12:26	49.2
Spain	Second	Lion-Peugeot	Guilppone				4:25:40	47.1
	Third	Hispano-Sulza	Chassagne				4:39:13	45.1
1909 winner	May 20	Lion-Peugeot, 2-cyl.	Goux	11		226.4	6:18:06	36
Targa Florio	May 16	Franco	Carliato	8	2	186.6	6:20:47½	29.6
Sicily	Second	Lancia	Olsen					
1909 winner	May 1	S. P. A.	Culppp	11		93	2:43:19	34.2
Vorturette Cup.	May 16	Lion-Peugeot	Boillot	3	3	186.6	5:20:43½	35.2
Sicily	Second	Lion-Peugeot	Guilppone				5:25:36½	34.6
	Third	Lion-Peugeot	Goux				5:31:25½	34.0
1909 winner	April 29	Lion-Peugeot, 1-cyl.	Goux	6		187.5	6:48:02	27.5
Ostend Cup	Sept. 6	Hispano-Sulza	Zuccarelli	6	3	250	4:44:41½	52.6
Belgium	Second	Lion-Peugeot	Boillot				4:46:52	52.2
	Third	Hispano-Sulza	Pilliverdie					
Liederkerke, Ostend and Williams cups	Sept. 6	Excelsior	Coosemans	1	1	250	6:10:22	45.0
1909 winner	Sept. 13	Imperia	Sabbe	2		249.6		



MISS HELEN STEIN'S CHALMERS, PRIZE WINNER IN HASTINGS PARADE

Gratifying Outlook in Nebraska

OMAHA, NEB., Oct. 30—With the close of the season for 1910 a review of the year's business affords a most gratifying retrospect and a most encouraging outlook for 1911. Gloomy forebodings of spring and midsummer, when it seemed that lack of rain would seriously affect the corn crop, the state's great staple, later gave way to the roseate reality of good business induced by the harvesting of more than 200,000,000 bushels of corn and a corresponding large wheat, oats and other cereal yield.

Up to October 1 of this year approximately 14,000 motor cars were registered in Nebraska, which covers a brief period of sales extending only 8 years back, and which are valued at about \$25,000,000. Of this number it is figured that about 20 per cent is owned by farmers and about 80 per cent in the cities and towns, although this proportion seems destined to change in fa-

vor of the farmer in the very near future.

The year 1910 was phenomenal in Nebraska's motor history, more than 5,000 machines having been sold in the state. It is not believed that the year 1911 will surpass this to any great extent and dealers will be content if the high-water mark of 1910 is equalled. The output of home-manufactured cars bids fair to exceed that of the present year. This is due to the fact that the Rogers Automobile Co. of Omaha has doubled the size of its plant and because the Jonz Automobile Co. of Beatrice has been reorganized and also will enlarge its capacity. Altogether there are four motor car factories in Nebraska, and their estimated output for 1911 is upwards of 1,100.

Altogether the outlook in the state is encouraging and there is hardly any town of any size that is not building a new garage

or enlarging an old one to keep pace with the business. In Omaha, the distributing center of the state, the business is on a healthy basis. While there have been a few failures, it has been a weeding-out process of those who embarked in the business knowing nothing about it and were bound to fail in this or any other business that they tackled under similar conditions. The result is that the business in Omaha is now in the hands of shrewd men, who have profited by the mistakes of their unfortunate brothers and have put their business on a sound footing. In Lincoln the increase in the business has been big. Lincoln has a great outlet for cars in the South Platte territory in Nebraska. Today Lincoln has 500 cars and ten dealers, all of whom are on a sound financial basis.

As to the farmers, they are greatly in evidence with their cars on Saturdays when they come to town. In every village a row of cars owned by farmers may be seen on Saturday in the public square. One of the banner towns in Nebraska is Kearney, a town of 7,000 population in Buffalo county. A conservative estimate places the number of farmers in this county who use motor cars at 15 per cent. On one farm just outside the city are three machines, all of which are used.

The excellence of the roads in Buffalo county is the principal reason for the large number of cars sold there. A trip in almost any direction from Kearney for 100 miles will show the finest roads of any to be found in the west. This feature was specially mentioned in the route book of the Glidden tour of 1909.

The city of Hastings is another live Nebraska town, with a population of 15,000 and six dealers. These are only typical counties and the same conditions are to be found all over the state. Everywhere the farmer is coming more and more to use the motor car. The farmer uses his machine for everything from a touring car to grinding corn and from pulling machinery about the place to pumping water or turning the crank of his separator.

Hastings held a motor car parade last week during the central Nebraska fall festival, in which the prize-winning cars were a Hudson driven by Mrs. Harry Dillon, a Chalmers driven by Miss Ella St. John and a Chalmers driven by Miss Helen Stein.

TRADE GROWTH IN INDIANAPOLIS

Indianapolis, Ind., Nov. 1—The beginning of the new season finds a large number of local motor car concerns in new homes. There has been a general moving in local circles, the tendency being to get just north of the downtown business district, at the edge of the exclusive residence section. Something more than \$500,000 has been spent during the summer and fall for new buildings.

One of the most pretentious building enterprises has been the construction of motor row along the west side of North



NEBRASKA'S MOTOR PROSPERITY—NEW GARAGE OF HARRISON & REID AT GRAND ISLAND

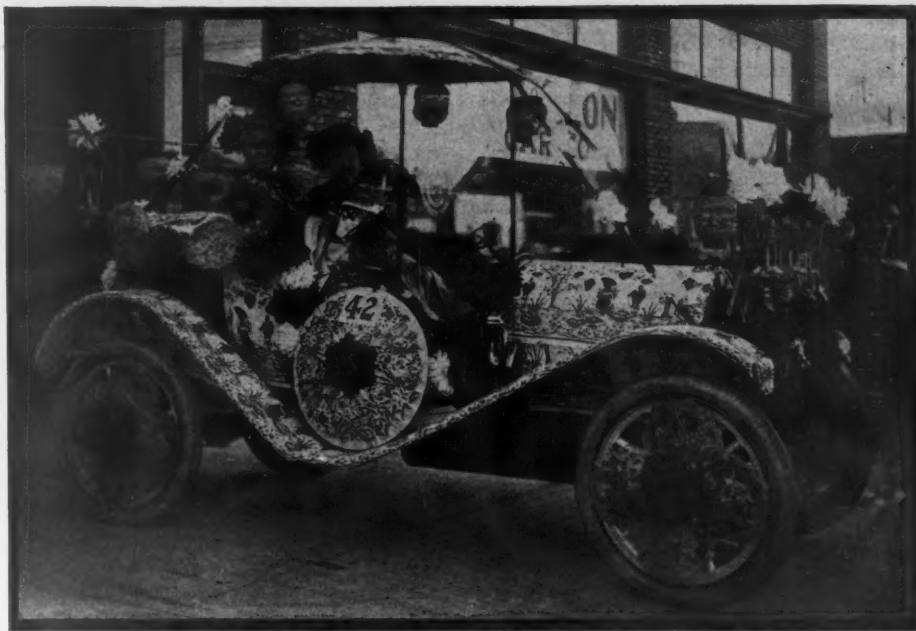
Capitol avenue, between Vermont and North streets, the big garage and sales-room of the Fisher Auto Co. forming the nucleus for the new row. There are seven buildings in the row, all of reinforced concrete and all erected by the Globe Realty Co., in which Carl G. Fisher is largely interested.

The Cadillac Automobile Co. of Indiana has located in one of the new buildings at 504 North Capitol avenue. The Capitol Auto Co., which has a garage, is at 506, the Indiana Automobile College occupying the upper floor. Then come Frank P. Fox & Co., having the Pope-Hartford and Rauch & Lang agencies, and also conducting a garage, taxicab and livery service. The factory sales branch of the Ford also has located in the row, together with the Knickerbocker Auto Co., agent for the Paterson; the Haywood Tire and Equipment Co. and J. B. Carpenter, a manufacturer and fitter of tops.

At the southeast corner of Capitol avenue and Vermont street, the Henderson Motor Car Sales Co., distributor of the Westcott and Cole, have located in a neat brick building. Over on North Meridian street a one-story brick building designed for motor car sales rooms has been completed and is being occupied by the Archey-Atkins Co., agent for the Pierce-Arrow and Woods at 425 North Meridian street; the Inter-State Motor Sales Co., representing the Inter-State and Winton at 427, and the Peck Motor Car Co., representing the Halladay and Great Western and Ennis & Stevens, representing the Speedwells, at 429. Another motor car sales building has been erected in North Delaware street, near Massachusetts avenue, and has been occupied by the Motor Car Sales Co., representing the Everitt, and by the Oakland Motor Car Co., representing the Oakland and Reliance. Within a short time the Holcomb Motor Car Co., agent for the Packard and Waverley, will move into its new building in North Meridian street.

TAMM GOES FARTHEST NORTH

St. Louis, Mo., Oct.—Oscar T. Tamm of St. Louis is claimant to the honor of driving farthest north in a motor car. Tamm has returned from a 4 months' trip, having crossed the arctic circle and gone 80 miles further north to Molmberget, a village in Lapland. In all, he says he traveled 12,000 miles in his car, frequently making more than 300 miles per day. He used a 75-horsepower car of French make. Starting from Paris, Tamm shipped his car across the English channel and toured Ireland, England and Scotland, embarking from Glasgow to Copenhagen, where he again started in his car and went to Stockholm. He crossed into Norway and then up to Sundsvall, Sweden. He went along the coast from there, crossing the arctic circle July 2. Tamm says the approach of his car was heralded along the route by telephone.



MRS. HARRY DILLON IN HUDSON, PRIZE WINNER IN HASTINGS, NEB., PARADE

Lone Star State's Latest Road Scheme

GREGORY, TEX., Oct. 30—The motor highway that is to be constructed between San Antonio and Corpus Christi, about 150 miles, will pass through the heart of the 160,000-acre ranch of Charles P. Taft, upon which the town of Gregory is situated. The movement looking to the early construction of this road is rapidly taking definite shape. The federal government is showing its interest and co-operation in the project by giving the services of Fay McClure, one of its road building experts, to aid in locating the route of the proposed highway and in supervising its construction. It is stated that there will be bond issues which will range in size from \$100,000 to \$500,000 for each county. The amount to be issued by the different counties will depend on the mileage of the road to be built through them. In all, there are

six counties that are to be traversed, in whole or in part, by the proposed highway. It is stated that with the exception of a sand belt of a width of about 35 miles, no unusual difficulties are to be encountered in laying out and building up the road. It is probable that the lower division, extending from Corpus Christi to a point some distance north of the Taft ranch, a distance of probably 50 miles, will be surfaced with crushed shells. These shell banks are easily available for road-building all along the coast. The material makes a lasting and dustless surface and is in general use for road-building in the coast territory.

In improving the Taft ranch much attention has already been given to the construction of motor roads and driveways. The broad shell-made roads extend to all parts of the big property.



NEBRASKA'S MOTOR PROSPERITY—NEW GARAGE OF STITT-DILLON MOTOR CAR CO. AT HASTINGS

USE FOR OLD CARS

HARTFORD, CONN.—Editor Motor Age—A striking example of the fact there is a lot of service left in old pleasure cars is shown in the service of a concern at South Glastonbury. The company recently purchased of a Hartford junk dealer an old single-cylinder Pope-Hartford chassis for \$100. The motor and transmission were in good shape and a man at the factory spent 3 days building a wagon body, which overhangs both the front and rear wheels. The lumber used cost \$12. The steering gear was altered, the gasoline tank placed under the front seat and a cork-rimmed steering wheel was added to the equipment. The double bucket front seat was stripped from an old car which had done 8 years' service and had then been relegated to the scrap heap. The owners figure that the entire cost of the car was not over \$150 and in the few weeks that it has been in service a saving of about \$100 has been effected. The body has about as much floor space as an ordinary single-horse express wagon, the speed of the vehicle is about 15 miles an hour, and it hauls the loads without trouble. The concern is located down in the country and is at a disadvantage in the summer for the reason that practically all the teams in that section are engaged in farm work and it is difficult to have the product of the company hauled to the river front or to the railroad for shipment.—W. J. J.

BATTERIES RUN DOWN

Quincy, Ill.—Editor Motor Age—Through the Readers' Clearing House will Motor Age answer the following questions:

1—Where can I secure the book entitled "The Motor Maid," review notice of which appeared in Motor Age, September 29, page 44.

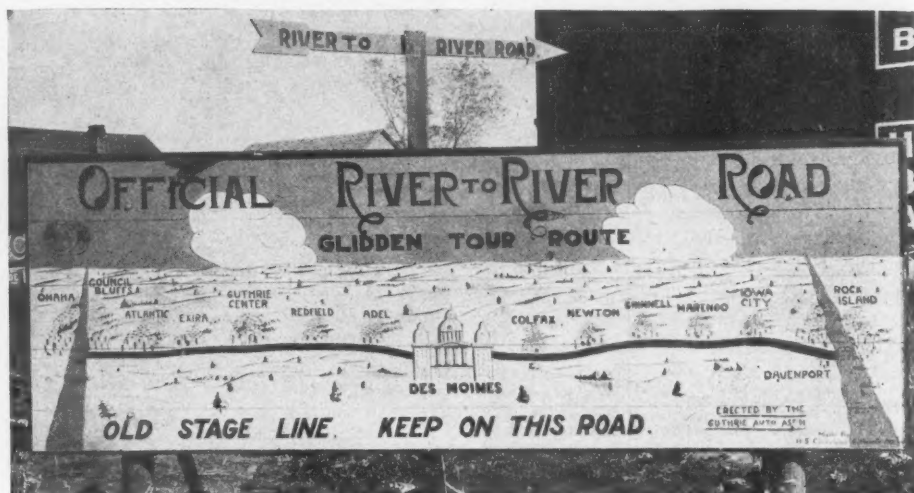
2—Where can I secure a book which gives road troubles and the causes of same?

3—What powered engine should a car have which weighs 2,500 pounds?

4—Sometime ago I removed the four dry cells in my car. As I have a magneto I use them only to start the engine. About a day after I installed them we had a storm and the roads being muddy I had no occasion to use the car. About 3 days after I went to the garage and attempted to start the engine, but could not do so. After examining everything I found the batteries were run down. They had been in only about 4 or 5 days then. I put in another set and the engine started immediately. I would like to know what caused the batteries to run down, as I had not used the car very much, and when I did, I was running on the magneto. There is no short-circuit of any kind. It was not switched on the batteries either. The batteries I have in at present have been in 2 weeks and seem to be as good as ever.—Motorist.

1—"The Motor Maid" can be secured from any of the large book stores, or direct

The Readers'



SIGN USED TO MARK IOWA'S RIVER-TO-RIVER ROAD

from the publishers, Doubleday, Page & Co., New York city.

2—"Automobile Troubles and How to Remedy Them," by Charles P. Root, may be obtained from the Charles C. Thompson Co., Chicago; and "Hand Book of the Automobile, Road Side Troubles," by Charles E. Duryea, may be gotten from Mr. Duryea, at Reading, Pa.

3—About 100 pounds per horsepower is a pretty fair average for the proportion of weight to power in a motor car; and at this rate a car weighing 2,500 pounds should have a motor with power ranging from 25 to 30 or 35 horse power.

4—There undoubtedly was a short-circuit either in the battery box, the switch or the wires connecting these two features of the ignition system. If you have a metal battery box, it is possible that the terminals of some of the cells were resting against the sides of the box. If your car had been out in the wet it is possible that a little water had gotten in somewhere and caused the short-circuit, or the water may have been splashed onto unprotected portions of the circuit while the car was being washed. Great care must be exercised to see that all connections are properly made, that the like terminals do not touch each other, and that the insulation of the wires, where they leave the battery box or come in contact with the frame of the car, is not frayed. It is very important that the battery box be water-tight, and if lined with metal, it should be insulated with rubber or heavy canvas or asbestos.

LOCATING A KNOCK

Smith Centre, Kan.—I should like to have Motor Age kindly explain through the Readers' Clearing House the probable cause of the following trouble: A customer of mine has an E-M-F which has been run 4,500 miles. He brought this car to me with the complaint that he had a knock

EDITOR'S NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated.

some place in the engine. I first took the motor down, cleaned off the carbon deposit, took up all the bearings, both crankshaft and crosshead; put the motor back together and adjusted the push rod stems to their proper lengths, checked the valve timing, also the ignition timing, which is all correct according to the markings, but still there is a knock in the front cylinder. By short-circuiting any two of the other three cylinders with the motor running we get a distinct thud regularly in the front cylinder. Release these and the knock will cease; short-circuit the front cylinder and the other three run smooth and even; release the short-circuiting from the front cylinder and it will give one distinct thud, then run as smooth and regular as the others on low throttle with no load. Driving it on the road, with a low throttle, there is no knock; open the throttle one quarter and there is the hardest knock; open it wider and it ceases. What causes it?—Charles L. Fawcett.

Assuming that you are correct in your statement that the main bearings of the crankshaft are properly adjusted, the only other possible cause for your trouble that presents itself, is that the attachment of the crankcase to the cross-members of the frame, is insecure. Motor Age would advise that you first assure yourself whether the knock really comes from the front end or the rear end of the crankcase. This may be done by loosening the ignition cables on the plugs of the first and fourth cylinders, then, while the motor is running, disconnect and connect each of them several times;

Clearing House



CAR THAT IS LISTED AT \$4,000,000 WITH LOAD

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

if the knock is at the front end, there will be a decided knock every time connection is made with the plug of the front cylinder, and if the knock occurs when the connection is made with the plug of the rear cylinder, then the rear-end attachment is at fault. If, however, there should be a knock at both ends, then, perhaps, both ends will require tightening up. To tighten these connections, lower the mud-pan and take off the inspection plates at the bottom of the crankcase; access can then be had to the cottered and castellated nuts on the bolts which secure the crankcase to the cross-members of the frame. Remove the cotter keys, tighten the nuts that are loose, and the trouble should be eliminated.

HIGH-PRICED CAR

Cedar Rapids, Ia.—Editor Motor Age—We note by the last issue of Motor Age that some of the motor car concerns are now reducing the price of their cars. We are handing you herewith a kodak showing our latest model, to show that while other fellows have reduced their price, ours has advanced. To prove it we send the enclosed picture. Our price as loaded is \$4,000,000.—J. D. Blue.

REMY CIRCUIT-BREAKER

Ladora, Ia.—Editor Motor Age—I would like to ask a question through the Readers' Clearing House, referring to the August 11 issue of Motor Age, page 17, Fig. 2, Remy circuit-breaker: When I used the coils with the buzzer, as I called it, often the platinum points would become pitted, requiring them to be evened off before I

would get a proper spark. Now is it necessary for the point P, as shown in that illustration, to become pitted in the same manner and require evening off, and if so can this be done by an armature by removing the screw to which this point is attached?—H. C. Gates.

In the Remy dual ignition system dry cells are employed to facilitate starting of the magneto, and all users of cars equipped with this system of ignition are requested to turn the switch onto the magneto as soon as the motor is started. It sometimes happens that a motorist will neglect to turn the switch from the battery to the magneto side, with the result that a set of cells that ordinarily would last a few months will be used up in a few weeks, and in a similar length of time the operation of the magneto will have been impaired because the platinum points of the circuit-breaker have been burnt and pitted by the nature of the induced battery current, which has been passing through them when the magneto should have been furnishing the current. On the other hand, some owners have tried to use storage batteries with the magneto, instead of dry cells, with equally disastrous results to the platinum points. They are damaged in exactly the same way that the points of a vibrating coil are damaged when operated with too strong a current or improperly adjusted. These points are most readily evened up on the side of a very fine emery wheel; but it may be done with a fine file, though more skill is required. A jeweler should be able to trim down these points very easily. In case the points are badly pitted, Motor Age would advise that you secure new platinum points from the factory, have them properly fitted, adjust the magnetó so that the points separate 1/32 inch, use only the required number of dry cells for starting, switch onto the magneto as soon as the motor is started, examine the circuit-breaker occasionally to see that the

adjustments are correct, and the magneto undoubtedly will give you very satisfactory service. Motor Age does not understand what is meant by using the armature for evening up the platinum points. If convenient send the contact-screw and V-shaped lever to the Remy factory, Anderson, Ind., to have the new points fitted; if this would be inconvenient, secure the platinum points only and write the Readers' Clearing House for information on how to fit them into place.

LOOK FOR CARBON

Toledo, Ill.—Editor Motor Age—Will Motor Age kindly tell me what is the trouble with my motor? It is a 1910 four-cylinder 30-horsepower Reo. I cannot get up speed on high gear on account of the knocking. I get up speed on the intermediate and then shift into high gear. It pulls good on a hill. It is hard to start the motor in the morning. When the gasoline is turned on, on high gear, the pounding is so bad I have to shift into intermediate. The engine misses fire except when I am going about 30 miles an hour.—R. F. Stevens.

Your trouble, apparently, is due to an accumulation of carbon in the cylinders of your motor; and it would be advisable to remove the valves from the top of the cylinders and scrape the carbon from the piston and cylinder-heads. When this is done, turn the starting crank and crankshaft so that all of the pistons are about half-way down in the cylinders, then pour about half a teacupful of kerosene into each cylinder and let it seep down past the piston-rings overnight. In the morning drain all the old oil from the oil reservoir at the bottom of the crankcase; also remove the inspection plates from the side of the crankcase and draw the oil out of the splash compartments with a squirt-gun, or mop it out with a clean cloth; then replace with the required amount of fresh oil of a good grade.

HIGH-GEAR TROUBLE

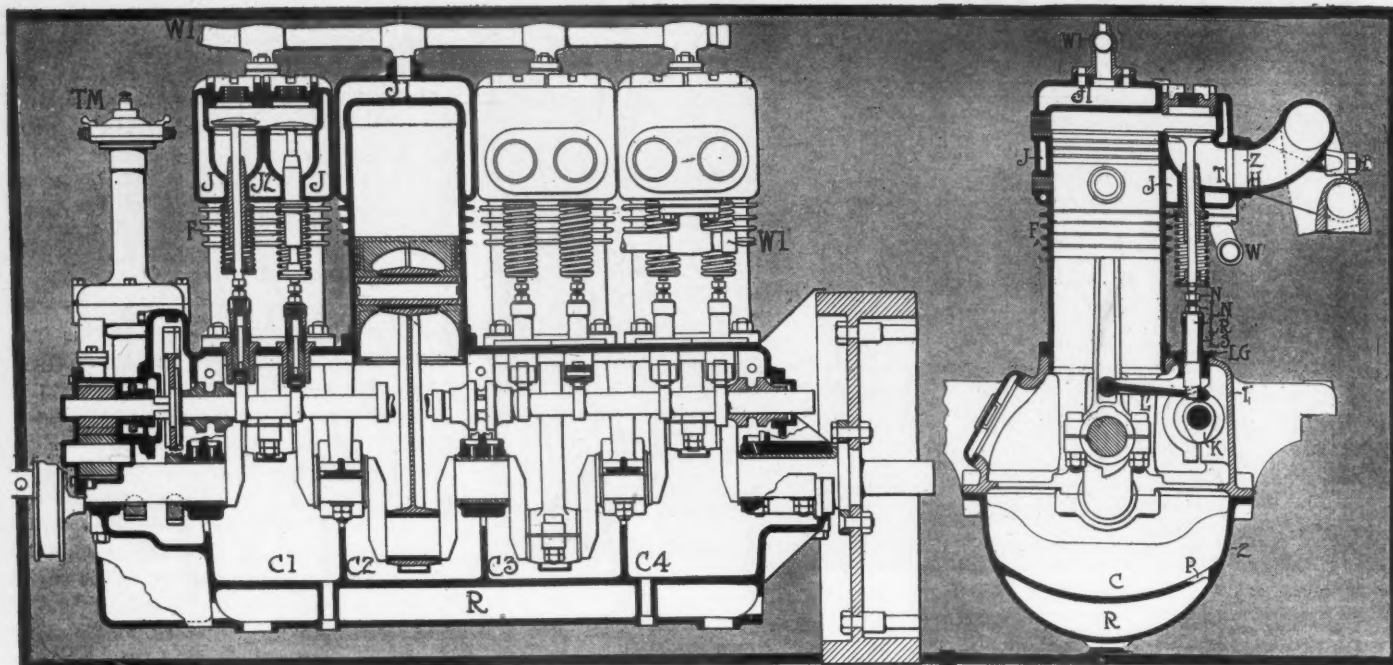
Springfield, Mo.—Editor Motor Age—Will Motor Age kindly tell me through the Readers' Clearing House how to remedy the high gear of a new No. 2 New York planetary gear. The three dogs are as tight as the engaging cone will permit, but one of the three is about 1/16-inch short. What could be the cause of the high gear not holding?—R. G. D.

Your trouble undoubtedly is due to the fact that the one dog is shorter than the other, so that an even bearing is not obtained upon the drum. It would be advisable to get a new dog and dress it down so that all are alike, or secure an entirely new set of dogs.

RIVER-TO-RIVER ROAD SIGN

Guthrie, Ia.—Editor Motor Age—We are sending Motor Age a photograph illustrating one of the signboards used in marking our famous river-to-river road. It will be seen no one should have any trouble finding the road.—Guthrie Automobile Association.

GLIDE CONTINUES BUT REFINES ITS LINE



FIGS. 1 AND 2—SIDE AND END SECTIONAL VIEWS OF MOTOR IN 1911 GLIDE CARS, SHOWING MANY DETAILS OF CONSTRUCTION

A CONTINUITY of previous models with improvement in detail and special attention to new body types, including a torpedo design with steering wheel on the left but control levers in the center of the car, briefly sums up the differences between the 1911 Glide cars manufactured by the Bartholomew Co., and the present models built by this concern.

For next year the company has announced five pleasure models, all fitted with the same motor, which is an adaptation of the Rutenber design, but built specially by the Glide people. This motor has a bore of $4\frac{3}{4}$ inches, with a 5-inch stroke, which gives an A. L. A. M. rating of 36.1 horsepower. The five models are intended to cover practically every range of requirements, and are a seven-passenger touring car, five-passenger touring car, four-passenger torpedo, four-passenger scout, which is a toy tonneau design; four-passenger roadster, and to these might be added the Glide delivery wagon. The general chassis details are alike on all of these models. All of them have a 120-inch wheelbase, except the scout and roadsters, which are made 122 inches. All of them are fitted with 36-inch wheels, except the scout, which takes a 40-inch size. A 4-inch tire size is regular on all models excepting the torpedo, which takes a $4\frac{1}{2}$ -inch size. One other respect in which a slight chassis difference appears is the spring suspension. A double set of semi-elliptics is used on the seven-passenger car, but all of the other models use the three-quarter elliptic rear springs. Vanadium steel is the material entering into the makeup of the springs on all models.

As the motor is the real thermometer of the car, so far as power is concerned, a careful analysis of its general design, as

well as the workmanship bestowed upon it, will be in order. Figs. 1 and 2 show the general design, consisting as it does of cylinders formed in separate casting and provided with integral waterjackets. Each cylinder is an L design, the offset accommodating the intake and exhaust valve. A novelty is the employment of four integral flanges beneath the waterjacket on each casting, giving the casting and air-cooling appearance which is in reality a fact. The relative cooling importance is shown in Fig. 1, where the flanges are designated F, and the waterjacketing space J. It will be noted that the waterjackets are short, in fact, stopping at the base of the valve

chamber instead of being continued downward to a point even with the lower cooling flange. It is not a new construction to see the combination of radiating flanges and waterjackets, the Maxwell models having used this combination since their inception, and one or two other concerns having adopted it since. In addition to the cooling fins, the company employs a belt-driven fan, as illustrated.

Although in many respects this motor bears striking resemblance to the Rutenber it differs in one essential, in so far as the cooling is concerned, and that is that the flow of water from the water pump WP, Fig. 4, is through a pipe E to the base of

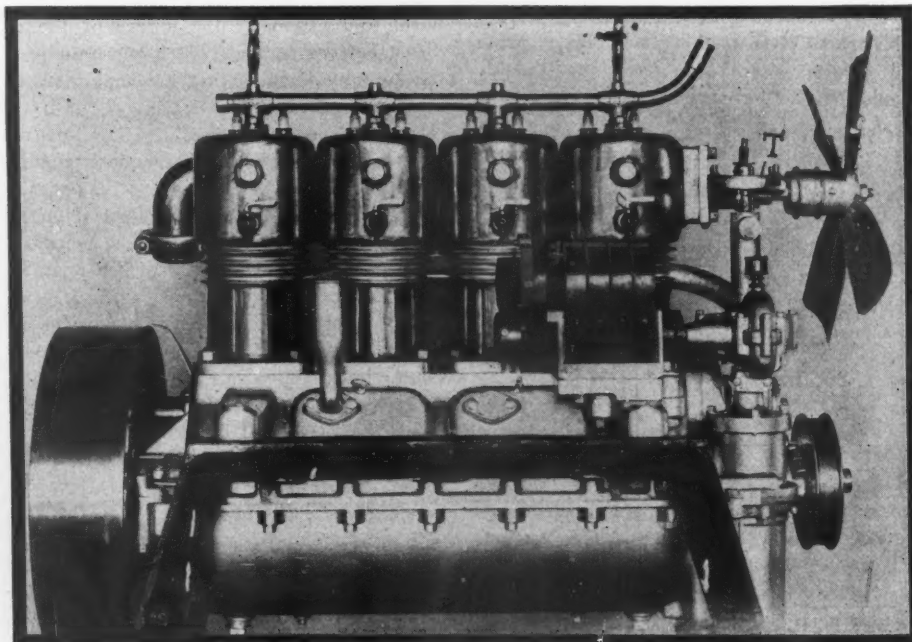


FIG. 3—RIGHT SIDE OF MOTOR IN 1911 GLIDE CARS

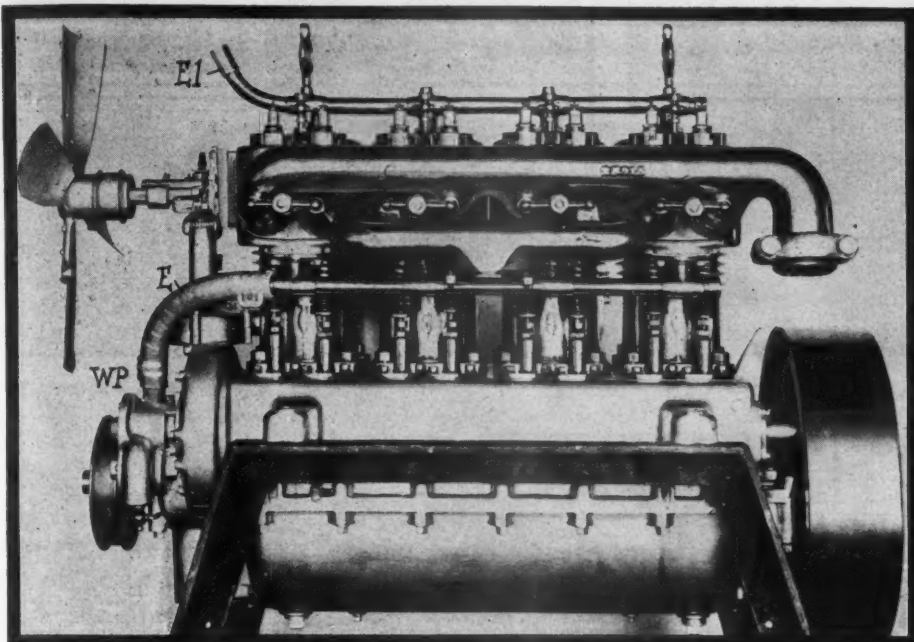


FIG. 4—LEFT SIDE OF MOTOR USED IN GLIDE CARS IN 1911

the valve chambers. In the regular Rutember design the water pipe enters the top of the cylinder. In the Glide motor the return waterpipe is designated E1. In Fig. 1, it will be noted that W and W1 are used to indicate these water pipes.

The structural design of this Glide motor might best be described as conventional throughout. The crankcase is a two-part design, Fig. 2, in which 1 is the upper portion, with the supporting arms, and 2 the lower compartment, forming a splash chamber C and also incorporating an oil reservoir R for the constant level system. The crankshaft is a five-bearing forging, as is common with motors using separate cylinder castings. A particularly adequate bearing surface is furnished. The rear end of the shaft carries a flange to which the flywheel bolts. One camshaft serves for both sets of valves. This shaft has a flange at its forward end, to which the timing gear bolts, instead of being keyed on, as is the construction employed in many motors. The pistons carry the usual lap-jointed eccentric compression rings, which are pinned

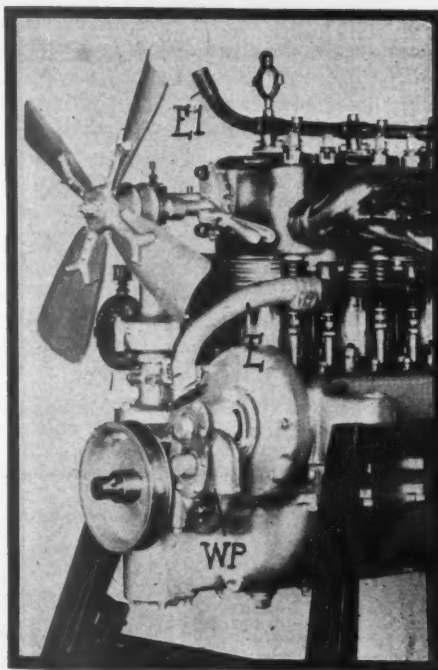


FIG. 5—FRONT END OF GLIDE MOTOR

against rotation. There are four of these rings above the wristpin, and in the plane of the hollow wristpin is a fifth ring, which holds the piston pin in place and prevents its end movement, and consequent scoring of the cylinders.

The method of driving the different motor parts is well carried out through the fitting of a vertical shaft at the forward end of the motor and on which the timer TM is located. The gear water pump WP is in reality a forward continuation of the camshaft. The vertical shaft is driven by a gear from the crankshaft, and midway of its height it carries a gear to drive the magneto. All of these parts are enclosed. On the lower end of the vertical shaft is the gear oil pump for the circulating system. There is in this motor, then, a complete grouping of all the necessary parts, with the exception of the carbureter, at the forward end, and there is no lay or secondary shaft at the right side of the motor.

The valve construction is best shown in the end section of the motor, Fig. 2. The valves are integral forgings; and the waterjacket J embraces the lower portion of the valve chamber. The tappet rods LR carry on their upper ends adjusting nuts N, together with lock nuts LN, and there is also a lifter spring LS to hold the nut N against the bottom of the valve stem, the object being the elimination of a clicking noise. The lower ends of the lifters do not carry the usual roller, but bear upon a lever L, which lever is fulcrumed to the crankcase at its inner end. This lever has a curved outward end with a receptacle into which the lower end of the lifter rod fits. The cam K thus bears upon the lever, imparting a vertical lift to the tappet and thus freeing it from any side thrust.

This sectional illustration also shows the method of attaching the manifold to the motor. A ground joint is used and a sleeve Z made use of in the union. The opening in the cylinder is tapered at T, whereas the manifold is made with a shoulder at H. One end of the sleeve Z bears upon the shoulder, and the other rides on the taper,

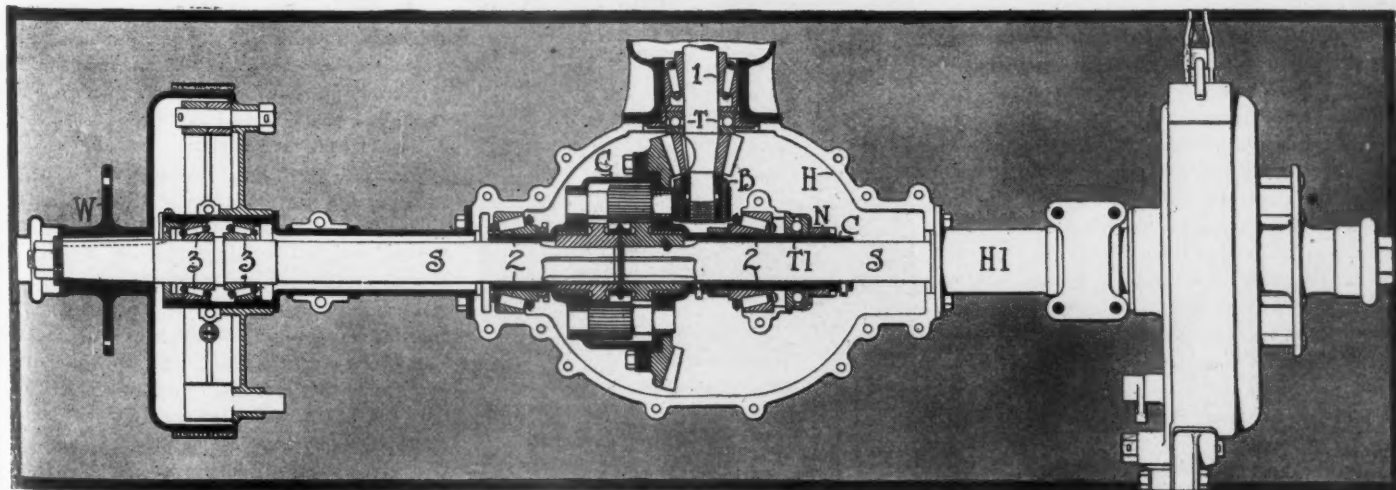


FIG. 6—SHOWING CONSTRUCTIONAL DETAILS OF SEMI-FLOATING REAR AXLE EMPLOYED IN THE GLIDE CARS

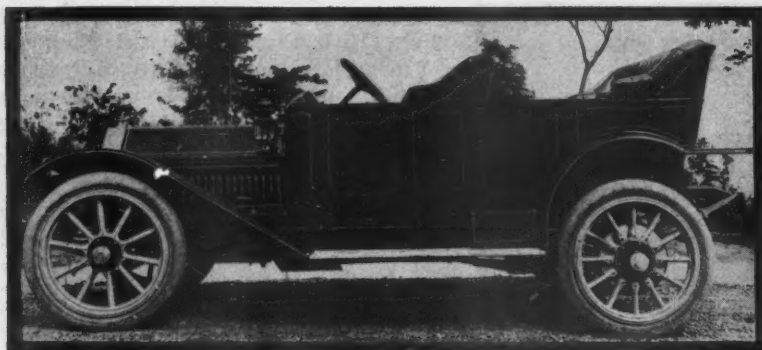


FIG. 7—NEW FORE-DOOR TOURING BODY OF 1911 GLIDE CAR



FIG. 8—TORPEDO BODY ON 1911 GLIDE CHASSIS

so that by tightening the nut B on the stud a gas-tight union is obtained. By reference to Fig. 4 it will be noted that this nut bears directly upon a yoke, one end of which presses upon the exhaust manifold and the other upon the intake one.

The lubrication of every motor is an important factor, and in this Glide design the details are well looked after. Attention already has been directed to the gear oil pump, which draws its supply from the reservoir R and delivers it to the crankshaft bearings. From these bearings the overflow reaches the four compartments, C1, C2, C3 and C4 of the crankcase. It is rare in a motor of this sort that the three partitions forming these compartments are so high, the height, however, insuring an adequate oil supply for each connecting rod. On the connecting rod cap is a scoop with an opening leading into the bearing, so that a portion of the oil reaches the bearing on each dip into the splash. The usual precautions are taken at the three main bearings of the crankshaft to lead the oil throughout the length of the bushings. Return grooves are furnished to prevent oil leaking from the main bearings. The pistons are lubricated by splash.

The ignition equipment on all models includes a double outfit, with two sets of plugs, one mounted above the intake valves, the other set over the exhaust valves. The main current source is an Eisemann or Bosch magneto, an option being given. The secondary current source is a storage battery with four-unit coil on the dash; a timer is used in the battery system. Both sets of ignition cables are carried in a fiber tube over the cylinder heads. Both spark and throttle control are on the steering wheel.

Transmission of power from the motor to the rear wheels is by means of a multiple-disk clutch, a propeller enclosed in a torsion tube, a three-forward-speed selective sliding gearset bolted on to the rear axle, and a semi-floating rear axle. Details of the rear axle construction are shown in Fig. 6. The propellershaft and driving shafts S are supported on Timken roller bearings 1, 2 and 3; ball bearings T and T1 are employed for thrust loads; a plain bearings B is provided for the end of the propellershaft beyond the pinion; and all working parts are enclosed in grease-tight housings H and H1.



From Irish Castles to French Chateaux

NORMA BRIGHT CARSON has published in book form a series of papers, many of which originally appeared in a monthly magazine, which she calls "From Irish Castles to French Chateaux." It is an impressionistic account of a tour through Ireland, Scotland, England and France, and each chapter is prefaced with an original poem. From the north of Ireland and the causeway of Ardrossan the author conducts the reader through the Scotch lake country, Edinburgh, Melrose abbey and Abbotsford, two quaint cathedral cities—York and Lincoln, London, Stratford-on-Avon, and the homes of Milton. "The perennial charm of London," the author says, "elusive as it is, and subtle in its defiance of analysis, seems to resolve itself into a

quality of atmosphere produced by the audaciousness with which historic facts, the reminiscences of ages long gone by, intrude themselves upon, mingle with, and affect the movements of an essentially modern spirit. In no other city in the world does the march of a typically twentieth century progress mark time so harmoniously with the solemn, heavy tread of the shades of those who traversed the same paths centuries ago. Age and modernity go arm in arm—but the one in the full vigor of health and life, the other a pale shadow of the things that have been; yet, in the very streets, these ghosts of a dead past insist upon hobnobbing with the representatives of a living and active present." The book is from the press of Small, Maynard & Co., Boston.

Art in Belgian Galleries

There is probably no period of the world when so much attention is being given to the study of art as at the present time, and art lover, student and tourist are all turning with greater interest to the old Dutch and Flemish pictures. In this connection we find "The Art of the Belgian Galleries," by Esther Singleton, of particular help, bringing us in close touch with the artist as well as his pictures. The author has aimed to impress upon the reader the most valuable paintings and the reasons for their being such. The artist traces the history of Flemish art from before the fifteenth century, when it was at its lowest ebb, down to the time of its greatest popularity, placing the pictures in the order of their development of the art and their influence on others. This volume of 370 pages, within a fanciful cover, contains numerous illustrations in sepia colors. It is published by L. C. Page & Co., Boston.

A Guide to Great Cities

A book for young travellers, although grownups will undoubtedly find it useful and instructive, is "A Guide to Great Cities," by Esther Singleton. It is a guide to ten of the most notable cities in north-western Europe—London, Antwerp, The Hague, Amsterdam, Hamburg, Copenhagen, Stockholm, Christiania, Edinburgh and Dublin, with illustrations of the places of note. A brief history of each city is given, its topography and literary associations. It is a cloth-covered, 330-paged volume from the press of the Baker & Taylor Co., New York.

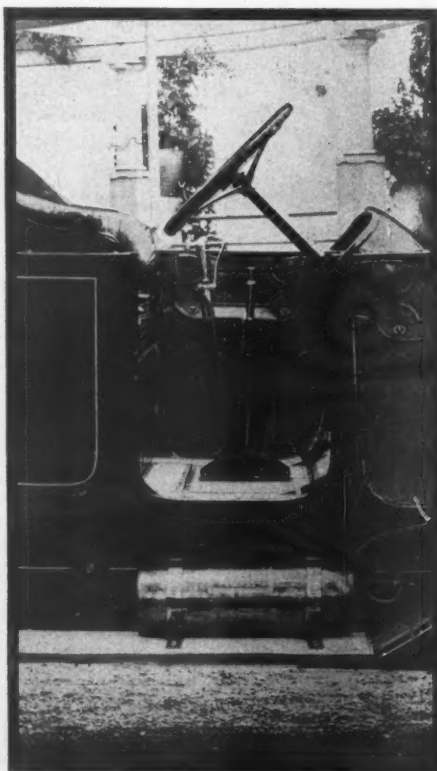


FIG. 9—SHOWING CENTRAL CONTROL LEVERS



The Motor Car Repair Shop

IN Fig. 1 a wiring diagram is given, representing the relative arrangement of the features of four popular types of jump spark ignition systems, including a single battery system, a single high-tension magneto system, a dual low-tension magneto system, and a double ignition system with a high-tension magneto, and a battery, coil and timer. In the single battery system, when the switch S is closed, current flows from the battery to the four-unit vibrating coils, on through one of the coils, and one of the primary wires L1, L2, L3, or L4, according to the position of the revolving segment of the timer, and then returns to the battery through the ground wire G. The secondary current generated in the coils every time a primary circuit is broken passes through one of the respective wires H1, H2, H3, or H4, to the spark plug in the cylinder. In the single high-tension magneto system both the primary and secondary currents are generated in the high-tension magneto and pass through the cables M1, M2, M3 or M4 to the spark plugs.

The features of the dual system include a low-tension magneto and battery as sources of current, a non-vibrating induction coil and one set of plugs. In this system, when the switch on the coil is on the battery side B, the current flows from the positive pole of the battery through the wire C to the coil, and then to the cir-

cuit breaker-box B1 on the magneto through wire P1, where, when connection is made, the current flows back to the coil-box through P2 and returns to the battery through C1. The primary current is broken in the circuit-breaking box B1, generating the induced currents in the non-vibrating coil and these high-tension currents flow to the distributor D of the magneto through the heavily-insulated wire F, and then pass on to the spark plugs through one of the wires W1, W2, W3, and W4. When the battery switch is turned to the magneto side M the primary current flows from the magneto to the coil through the wire P1, and when the connection is made in the circuit-breaker box B1 it returns through wire P3. And when the circuit is broken in the breaker-box the high-tension currents induced in the coil go to the distributor and on to the spark plugs just as when the battery was employed.

In a double ignition system there are two independent ignition systems. In this diagram the battery system above described would comprise one of the systems, and the high-tension magneto system the other. The switch S1 on the coil box of the batter system and the wires MG and GG leading to the magneto are merely employed to short circuit the primary current of the magneto and prevent the induction of the high-tension currents required at the spark plugs when it is de-

sired to cut this system out of action. The double system requires two sets of plugs, one for each system as indicated.

CAUSES OF TROUBLE

No explosions—

- 1-Switch off
- 2-Batteries exhausted
- 3-Battery to switch wires short-circuited
- 4-Switch out of order
- 5-Magneto short-circuited
- 6-Broken battery connection
- 7-Batteries nearly exhausted
- Regular miss-firing, one or more cylinders—
- 8-Spark plugs sooted
- 9-Insulation cracked
- 10-High-tension cables short-circuited
- 11-Timer to coil wires short-circuited
- 12-Vibrators out of adjustment
- 13-Magneto distributor contacts worn
- 14-Spark plug points out of adjustment
- Irregular miss-firing, one or more cylinders—
- 15-Batteries weak
- 16-Defective wiring
- 17-Dirt or loose metal in timer
- 18-Loose connections

REMEDIES

No explosions—

- 1—Turn on switch
- 2—Recharge or replace batteries
- 3—Test with fresh wire
- 4—Attach or shunt wires around switch
- 5—Remove wire to switch, crank motor
- 6—Tighten all connections
- 7—Readjust vibrators on coils
Regular miss-firing, one or more cylinders—
- 8—Remove and clean
- 9—Replace with good plug
- 10—Separate from metal of engine
- 11—Rewire
- 12—Readjust and clean points
- 13—Renew brushes or stretch springs
- 14—Space 1/32 inch
Irregular miss-firing, one or more cylinders—
- 15—Recharge or renew battery
- 16—Insulate or renew wiring
- 17—Clean timer
- 18—Find and tighten

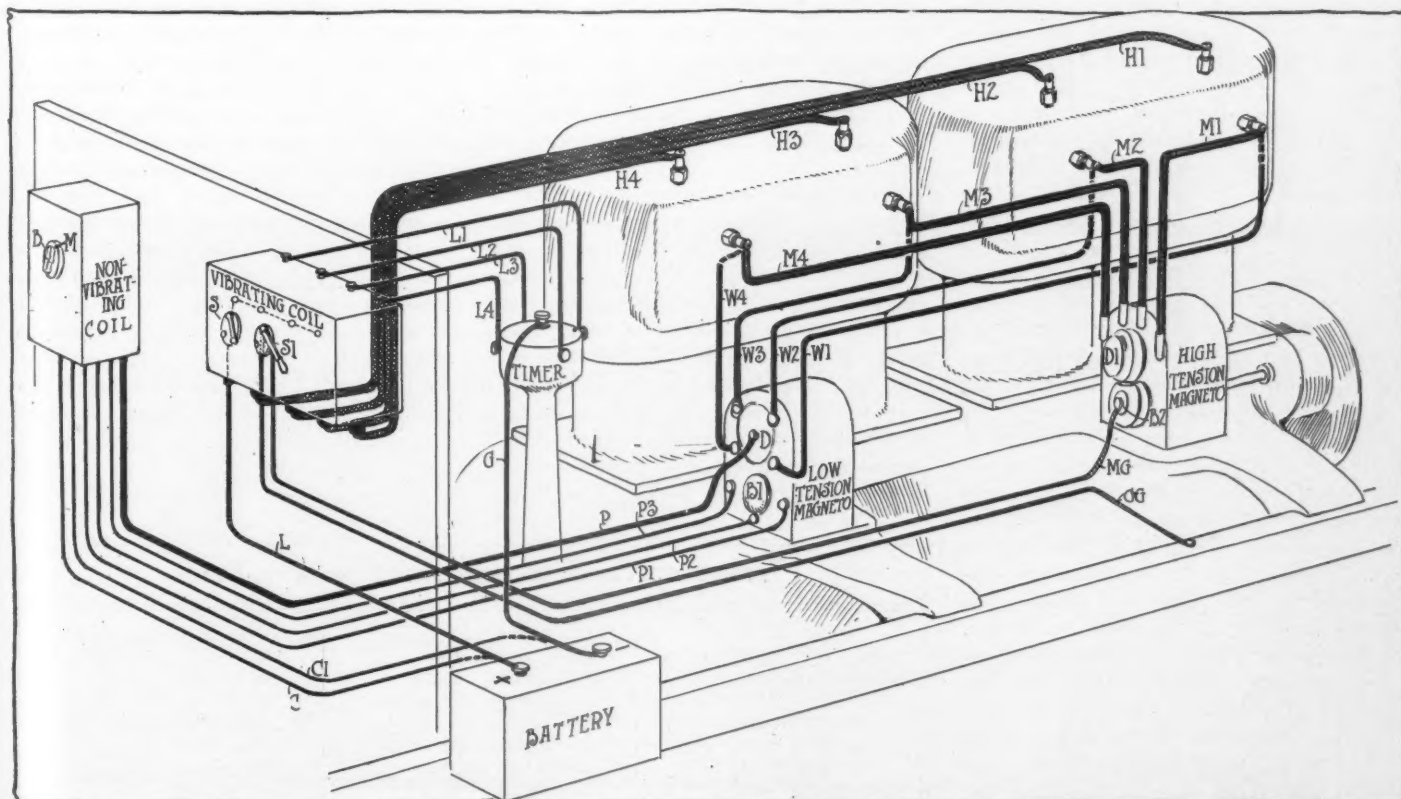


FIG. V—WIRING DIAGRAM SHOWING RELATIVE ARRANGEMENT OF FEATURES OF FOUR JUMP-SPARK IGNITION SYSTEMS

PULLMAN CAR DESIGN REMAINS UNALTERED

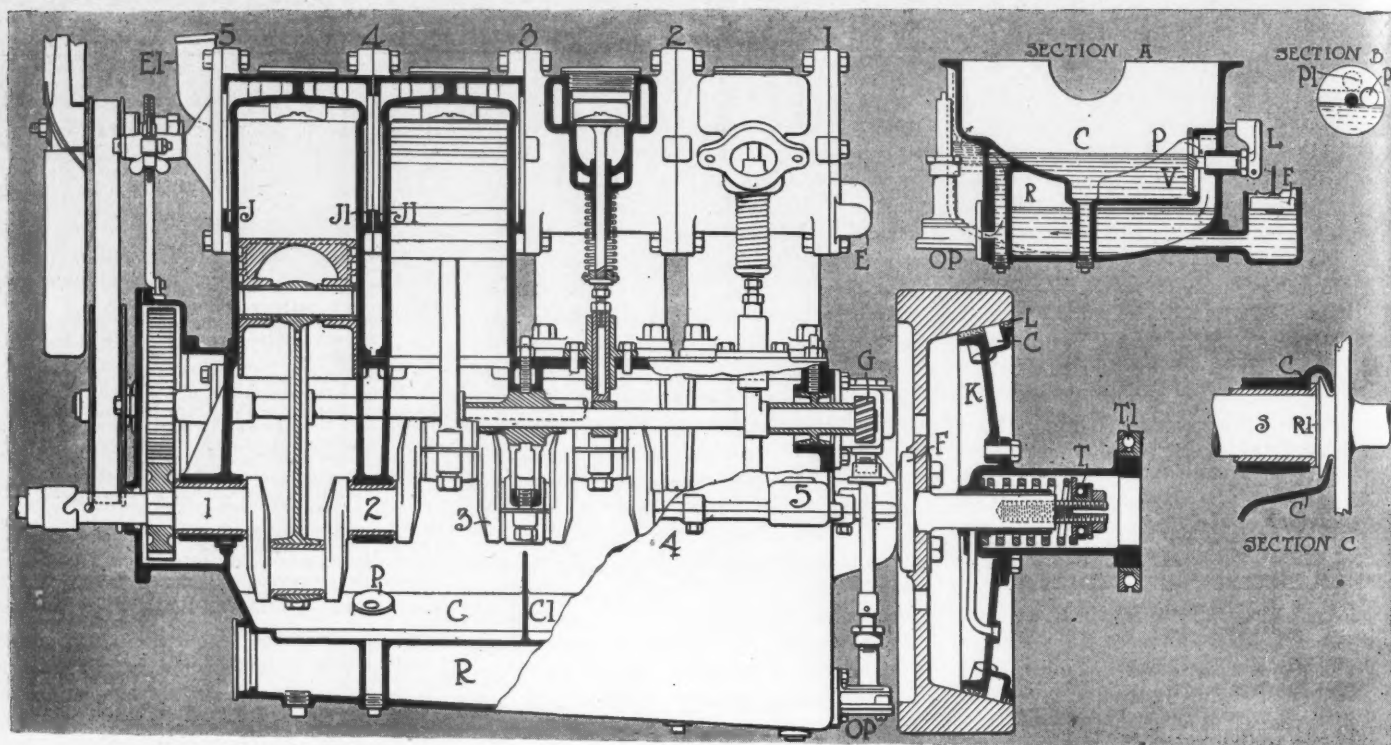


FIG. 1—VERTICAL SECTION OF PULLMAN FOUR-CYLINDER MOTOR SHOWING THE CONTINUOUS WATERJACKET FORMED BY CUTTING AWAY THE JACKET ENDS AT J1 AND BOLTING THE FOUR CYLINDER CASTINGS TOGETHER, FORMING IN REALITY A MONOBLOC CONSTRUCTION
—THE DETAILS OF MOTOR OILING ARE SHOWN IN SECTIONS A, B AND C

PERHAPS there is nothing in the motor car realm at the present time so hard to define as the term pioneer. The majority of our motor cars have become so conventional—that is, employing practically the same design as many others—that it is impossible except in one or two cases to point to a car which has been a pioneer along more than one line. In one respect the Pullman Motor Car Co. has been a pioneer in motor construction in the matter of a continuous waterjacket for four-cylinder motor. The continuous waterjacket is one of the trends of the present construction in small and medium-sized motors. It is universal where the cylinders are formed in one casting—monobloc practice—but has been adopted by four or five concerns during the last two seasons where the cylinders are cast separately. With the Pullman company this continuous jacketing has been used for six seasons. The scheme is illustrated in Fig. 1, which is a side section of the motor. There are four separate cylinder castings, which have the sides of the waterjackets cut away at J, shown in the first cylinder. At J1 appears the continuous water space between cylinders one and two, due to cutting away the jacket, as illustrated. What has been done between these two cylinders has been done between all the other adjacent ones. In order to make a continuous jacket it has been necessary to mill off the faces of the jackets and form water-tight unions between the cylinders at points 2, 3 and 4, bolting the adjacent cylinders together.

At points 1 and 5, end plates are used, with which are incorporated the intake water pipe E on the rear cylinder, and the exit or return water pipe El on the front cylinder. There is in this continuous waterjacket construction a common water space from the rear to the front cylinder, and the water piping is limited to the intake and exit pipes. A water pump is used for maintaining the circulation, and in addition there is the belt-driven fan located between the front cylinder on the radiator.

But while the continuous waterjacket is looked upon favorably because of its simplifications, there is another phase to this construction which is meritorious. The matter of casting cylinders is one that has given a great amount of trouble, and this is particularly the case in monobloc castings. The casting art has also been kept to its maximum in cylinder casting work, due to the intricate waterjacketing around the cylinders and valve chambers. In the Pullman case, foundry practice is

simplified, in that large openings are left so that the gases can escape and there is no danger of destroying the castings. From a manufacturing point of view this is a primary consideration.

It can further be argued in conjunction with the continuous waterjacketing that a compact motor construction is obtained, the length over all in the four cylinders with $4\frac{1}{2}$ -inch bore being 24 inches from the face of the front cylinder to that of the rear. In spite of this short space the design permits of five crankshaft bearings, designated respectively 1, 2, 3, 4 and 5, these being made up of three main and two secondary bearings. The bearing surface in the $4\frac{1}{2}$ by $4\frac{3}{4}$ motor is distributed as follows: Front $2\frac{3}{4}$ inches long, $1\frac{1}{8}$ -inch diameter; center, the same; the flywheel ends $3\frac{5}{8}$ inches long and $1\frac{5}{8}$ -inch diameter; and the two secondary bearings $1\frac{1}{8}$ inch long and $1\frac{1}{8}$ -inch diameter. In Fig. 4 the secondary bearings are 2 and 4. Parsons white bronze is used in all of these.

Passing from those features of motor

SPECIFICATIONS OF THREE PULLMAN MODELS

Model M.	Model K.	Model O.
Bore— $5\frac{1}{4}$ inches	Bore— $4\frac{1}{2}$ inches	Bore— $4\frac{1}{32}$ inches
Stroke—6 inches	Stroke— $4\frac{1}{4}$ inches	Stroke—5 inches
Wheelbase—127 inches	Wheelbase—155 inches	Wheelbase—110 inches
Tires—Front, 36 by 4	Tires—Front, 34 by 4	Tires—Front, 34 by $3\frac{1}{2}$
Tires—Rear, 36 by $4\frac{1}{2}$	Tires—Rear, 34 by 4	Tires—Rear, 34 by $3\frac{1}{2}$
Front spring—40	Front spring— $40\frac{1}{4}$	Front spring—38
Rear spring—44	Rear spring—51	Rear spring— $40\frac{1}{2}$
Brake drum—16 by 2 inches	Brake drum—12 by 2	Brake drum—14 by 2

construction which have more or less interrelation with the continuous waterjacketing design to the general motor characteristics, it will be observed that the Pullman motor is a T-head design, Fig. 2. The valves with taper seats have nickel steel heads electrically welded to the machine steel stem. The tappets T have an adjusting nut N on their upper ends, and their lower ends carry rollers R bearing direct upon the cam. With this tappet construction, the same as used in the majority of high-priced cars, all noise between the tappet and the valve stem can be eliminated, and the period of valve opening changed.

Considerable care in manufacture is devoted to the pistons and cylinders. In the $4\frac{1}{2}$ -inch motor a limit of .005 inch above and below this measurement is permitted. The pistons are ground .003 inch under the cylinder size, as high up as the first piston ring, and from that point to the top .02 inch under the cylinder bore. This greater allowance between the piston head and the cylinder at the top is to allow for the greater expansion in the piston at that point because of the heat from the combustion of the gases. The same care in manufacture that is noted in the pistons and cylinders appears in the wrist pins, which are steel tubes fitted to within a close limit of the piston bushing.

Leaving the structural details of the Pullman motor, perhaps none of the accessory features demands more attention than the lubricating system, shown in part of Fig. 1, which consists of the usual crankcase reservoir R and the compartments C and C1, accommodating a splash into which the connecting rods dip. In each compartment is an overflow pipe P, allowing the oil to drain back into the reservoir. In connection with the overflow pipe P is

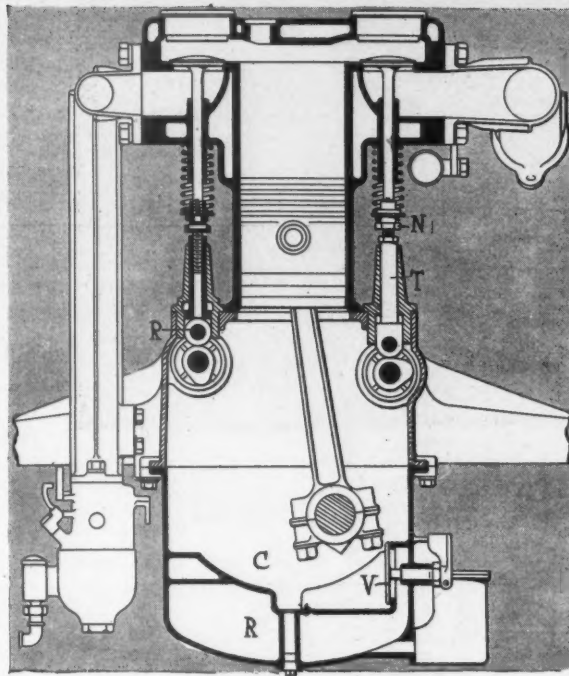


FIG. 2—END SECTION OF PULLMAN T-HEAD MOTOR SHOWING THE TAPPET ROD DESIGN AND METHOD OF ADJUSTMENT

an interesting Pullman detail, shown in section A, which is a cross section of the crankcase. It will be noted that the overflow passage P is in reality a circular hole in a disk V, this disk being rotatable, so that as the disk or valve is rotated the hole P, as shown in detail in section B, is raised or lowered, the oil level consequently altered. There is a locking mechanism L on the outside of the crankcase for retaining any adjustment, and by means of which the oil level can be fixed at any point without having to reach the inside of the crankcase. This illustration shows the conventional gear pump OP, which is driven from the camshaft. The arrows also show the course the oil takes in being taken from the reservoir R to the compartments C and C1. On the oppo-

site side of the motor is a valuable lubricating detail, namely, a float F, carried in an oil well, with an oil supply in common with the crankcase. The oil in this well stands at the same level as that in the reservoir R. As its level is indicated by a pointer on the stem of the float F, the driver is apprised of the quantity of oil without having to get underneath the motor. The location of the oil pump and its method of drive are shown in Fig. 1, in which G is the gear on the camshaft through which the power is transmitted to the vertical pump-shaft.

Still a further lubricating detail is shown in Fig. 1, section C, and which is the oil ring R on the shaft S. This oil ring is intended to prevent oil leaking past the end of the case C, the theory of its operation being that because the diameter of the ring R is greater than that of the shaft S, its peripheral speed is greater and the oil is thrown by centrifugal force from the shaft against the sloping side of the case C, and so conducted back into the case. It is customary with manufacturers that where a method of preventing leakage of this nature is not used, felt or other packing is substituted.

The Transmission Details

With the Pullman car the unconventional details of construction practically are incorporated in the motors, the transmission details, beginning with the cone clutch and ending with the Timken and Standard axles, are typical designs throughout. Care in detail of manufacture is everywhere apparent. The cone clutch has the male member K faced with leather L, Fig. 1, and also provided with cork inserts C, used to ease engagement. The clutch engagement spring is carried

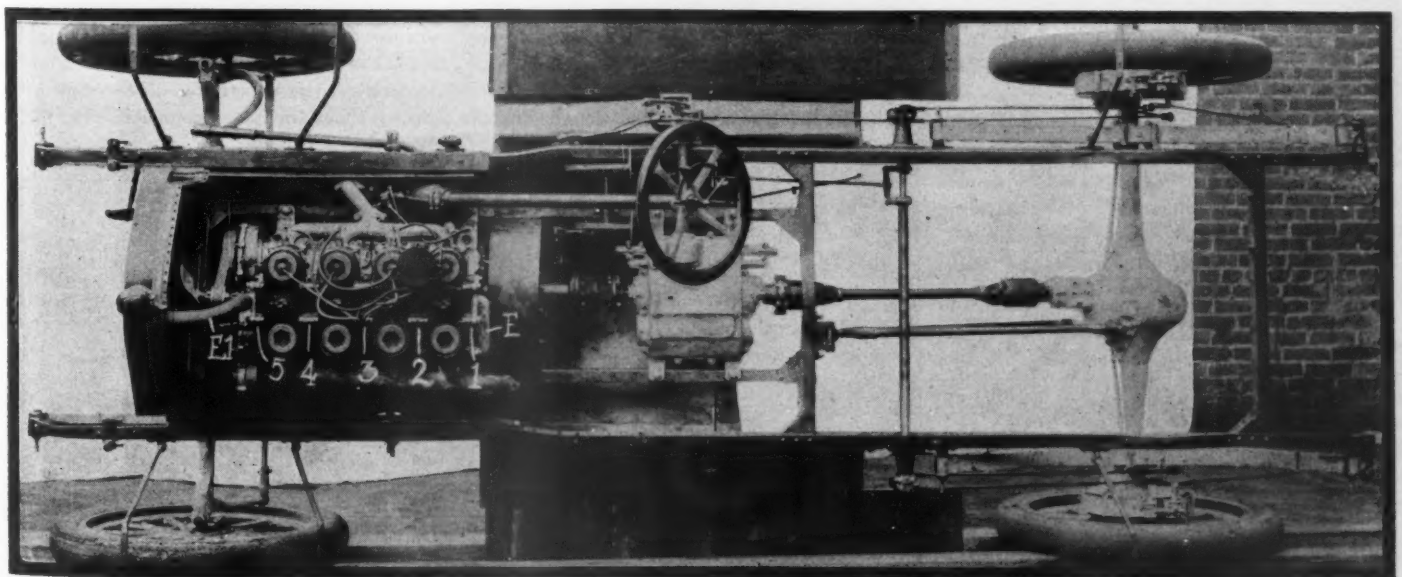


FIG. 3—CHASSIS OF PULLMAN MOTOR SHOWING IT TO BE A THREE-UNIT DESIGN, THE MOTOR, GEARBOX AND REAR AXLE BEING SEPARATE UNITS WITH UNIVERSAL JOINTS BETWEEN THEM

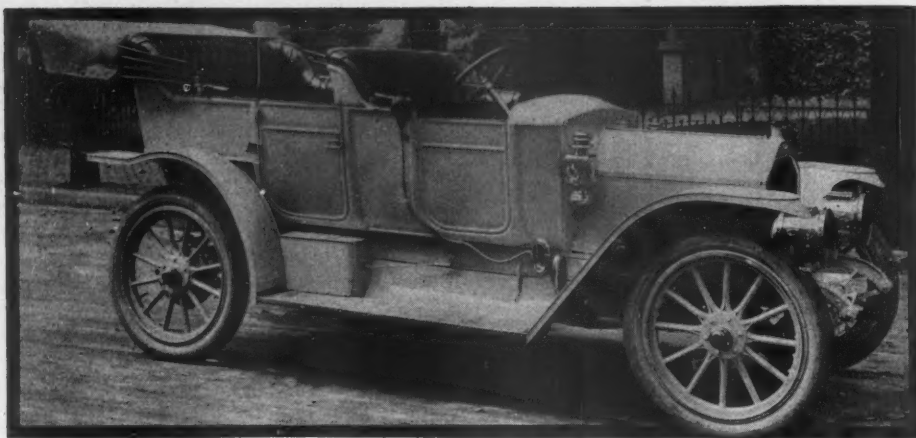


FIG. 4—PULLMAN MODEL K WITH FORE-DOOR BODY

within a hollow shaft carrying the part K, and has a thrust bearing T, against which the washer forming the spring seating bears. There is also a larger thrust bearing T1 used in connection with the yoke for releasing the clutch.

The gearbox, not illustrated herewith except as shown in Fig. 3, is a three-speed set with the shafts mounted on Hess-Bright bearings. The gears are of six pitch and formed from chrome-vanadium steel, being given the usual heat treatment necessary with alloy steel. Both shifting units are on the main shaft, which is formed with integral keys. From the gearset to the floating rear axle is a propellershaft with double universal.

The framework on Pullman cars has the side members offset at the dash, but straight otherwise, except in model O, which uses three-quarter rear springs and as a consequence has the side members dropped in front of the rear axle. On all models a worm-and-sector type of steering gear is used.

In the matter of body construction little change has been made in any of the Pullman bodies, other than a little more leg room, due to adding 2 inches to the wheel-base of all three models. The general body appearance has been altered somewhat by changing the door lines in order to give a straight-line effect throughout. In addition to its regular lines the company fits fore-door types, as illustrated herewith.

MEET AT WHITE PLAINS

New York, Oct. 31—A Maxwell proved the feature of the race meet given Saturday afternoon at the Westchester county fair grounds under the auspices of the Automobile Club of White Plains. The car finished first in the 30-mile event, winning from another Maxwell, an Allen-Kingston and two Mercedes, one of which has made creditable showings in two Vanderbilt cup races. The track was exceedingly trying to the heavy cars, on account of its sharp turns and rough surface, and the terrific strain on the right tires soon put them out of competition. The Maxwells, however, slipped along without trouble and were all alone at the finish on account of their light weight and

the fact that no mechanic rode with either of the drivers.

A good crowd turned out to see the races, but the wholesale scratching deprived the card of much of its interest. The best time trials were made by Wishart in a Mercedes in 1:14 $\frac{1}{4}$ and Ormsby in an Allen-Kingston in 1:21. The first race was won by H. Mendell, Jr., in a Mercedes, who covered the 5 miles in 7:09 $\frac{1}{2}$. A Marion and an Allen-Kingston also ran. Costello, in a Maxwell, had a cake-walk in the second, making the 5 miles in 6:44 $\frac{1}{2}$. A Maxwell and Krit finished as named. The third race failed to fill and a Mercedes and a Marion contested in a match, the former finishing the 10 miles all alone after the Marion had suffered gear trouble.

A Chalmers was awarded the cup in the 20-mile event, as the other contestants failed to show up. A 10-mile extra event was put on in its place and the Chalmers won the race from the two Maxwells.

In the 30-mile feature event two Maxwells, Allen-Kingston and two Mercedes competed. Wishart's Vanderbilt cup car jumped into the lead at the crack of the gun and within 5 miles had lapped the field twice, when a gasoline feed pipe broke and the car lost five laps before temporary repairs could be made. In the meantime Maxwell No. 1 had challenged the other Mercedes and had succeeded in getting to the front. From there to the finish the Maxwell remained in the van.

Wishart made quick repairs and started after the leaders, but after four rounds was obliged to withdraw. About the same time Mercedes No. 9 swung into the stretch in trouble with its right tires, and on the next round the Allen-Kingston drew out with the same trouble. The tires were worn almost to the inner tubes in each case. The Maxwells tin-canned along by themselves and completed the route in good order.

MOTORS SCARE GAME

Bangor, Me., Oct. 29—Reports of motorists going into the hunting regions in motor cars and bringing back lots of game have been received here frequently since the shooting season opened and some of those who have the sport at heart believe that the introduction of the motor cars into hunting will spoil the whole thing sooner or later. Alden P. Webster, a big pulp mill operator at Orono, and a veteran sportsman, says that unless something is done the game will be driven farther and farther north, making it hard for the average hunter to get anything. The matter may be taken up by the next legislature, perhaps. Mr. Webster says that not only the birds, but the deer are falling victims to the motor hunters, and that they will follow the way of the great fishing grounds. In speaking of the matter Mr. Webster says:

"I am just back from a trip up Wytopitlock way, and I can tell you the game is suffering up that way from too much motor car. There is both business and pleasure in this hunting by motor car. The natives would do a good deal of shooting, anyway, even if they had to go on foot and were shooting merely to supply their own table, but nowadays there is a chance for big profits. These cars will take the lazy hunter right into the heart of the best game regions in a hurry, where he can knock over what he wants and then get home quickly. I know of many car owners who take a spin out along the country roads on a Saturday solely for the purpose of buying birds from the people along the route. Every farmer's boy is shooting all the partridges he can find and holding them for Saturday customers."

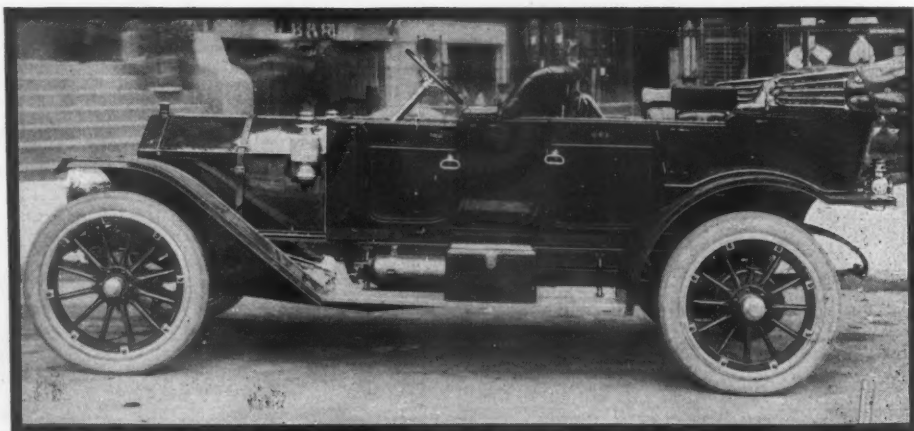


FIG. 5—PULLMAN MODEL M WITH SEVEN-PASSENGER, FORE-DOOR BODY

Current Motor Car Patents

SINGLE-CYCLE Motor—No. 973,268, dated October 18; to Charles Leisha Fogg, Kennett Square, Pa.—This patent relates to an internal combustion motor of the vertical type which might be called a single-cycle motor because there is an explosion or power impulse at every stroke of the piston in the power cylinder. As shown in Fig. 2, the motor has combustion chambers C above and below the pistons F; charging cylinders H and H1 are formed both above and below the plungers P1. A rigid piston-rod R, passing through the wall W, which separates the power and compression cylinders, connects the power pistons P with the plungers P1; and a regular connecting rod communicates between the plungers P1 and the crankshaft of the motor. Manifolds M conduct the gases from the charging cylinders H and H1 to the power cylinders above and below the pistons P.

New Two-Cycle Motor—No. 972,841, dated October 18; to Charles W. Foster, New Haven, Conn. In Fig. 4 a sectional drawing is shown of a new two-cycle internal combustion engine design which is not greatly unlike the engine now used in Elmore cars, as it employs a double-diameter cylinder, using the upper smaller diameter portion as a working cylinder, and the lower diameter portion as a charging chamber. It differs, however, in the arrangement of the gas passages and in that the gases are compressed under the lower portion of the larger diameter of the piston. In operation, as the piston T reaches the upper end of the stroke a vacuum has been produced in the annular chamber E, so that when the ports O are uncovered fuel is drawn in at I through the passages S and the ports O into this chamber E. When the piston descends the fuel beneath the lower larger diameter portion X is compressed until the top of the piston T uncovers the opening R, whence the compressed gases flow through

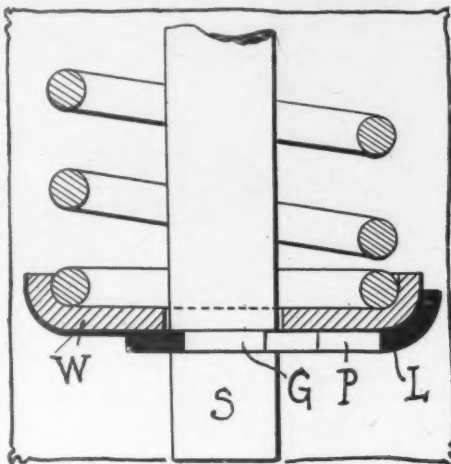


FIG. 1—NEW RETAINER LOCK

the openings P, into the passage B, through the port R, into the working cylinder. As the piston again rises the fuel in the working system is compressed and a new charge is drawn into the charging chamber E. At the top end of the stroke ignition of the compressed gases in the working cylinder takes place and the cycle repeated.

New Floatless Carbureter—No. 963,262, dated October 18; to Paul Daniel, Perth Amboy, N. J.—The carbureter covered by this patent is illustrated in section in Fig. 3, and is interesting in that it has no float and has three spraying nozzles. In operation air is drawn in at E when the throttle valve V is opened, and passes upwards through the openings O into the mixing chamber containing the three nozzles Z, Z1 and Z2. The ascending air currents open the valve FV and passing upwards draw gasoline from the nozzles. The mixture thus formed passes out of the carbureter at X into the intake pipe of the motor. The center needle valve N is rigidly and adjustably attached to the piston valve FV, whilst means are provided for opening the other needle valves

in succession upon successive movements of the piston valve. Owing to the arrangement of the valve FV and the auxiliary outlet valve AB, back firing in the carbureter cannot affect the fuel supply, which is admitted at F.

New Cone Clutch-Brake—No. 937,187, dated October 18; to Clarence M. Foss, Columbus, O.—This patent covers a cone type of clutch-brake adapted to stop the clutch from spinning when released so as to facilitate gear changing and prolong the life of the gears. The clutch spider is secured to the shaft of the gearset, while the drum is an integral part of the stationary clutch collar. When the clutch spider, which is secured to the sleeve, is disengaged from the speedily revolving flywheel, the drum at the opposite end of the sleeve comes into contact with the clutch spider, checking the momentum to the shaft and thus facilitating gear changing as above mentioned.

New Valve-Spring Retainer—No. 972,434, dated October 11; to Oscar Blomberg, Muskegon, Mich.—This patent relates to a new method of securing the retainer washer of a valve spring to the valve stem. As shown in Fig. 1, the valve stem S has an annular groove G near its lower end, a device L of the shape shown in the illustration is provided to fit into this groove and lock the retainer washer W into place. This interlocking device L has an elongated slot with relatively wide and narrow extremities; the large extremity permitting the device to be positioned on the stem and the narrow extremity being adapted for interlocking engagement with the groove G. The outer end of this locking-device is curved upward to conform to the shape of the outer edge of the retainer washer W, so that when the washer is let down upon it it is secured into place. To loosen the valve spring raise the retainer washer and remove locking device.

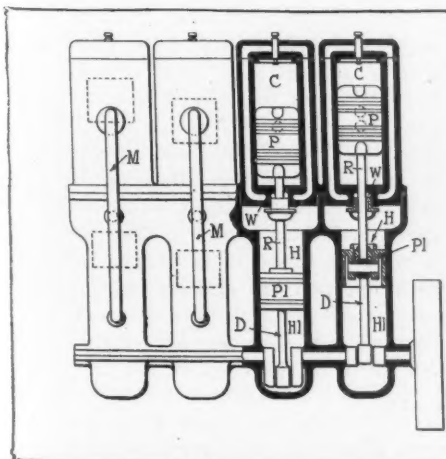


FIG. 2—A SINGLE CYCLE MOTOR

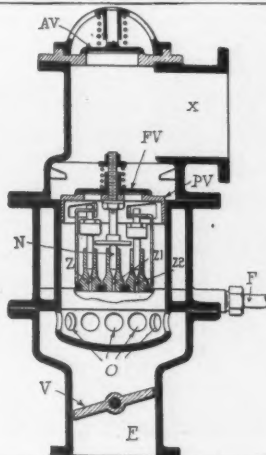


FIG. 3—A FLOATLESS CARBURETER

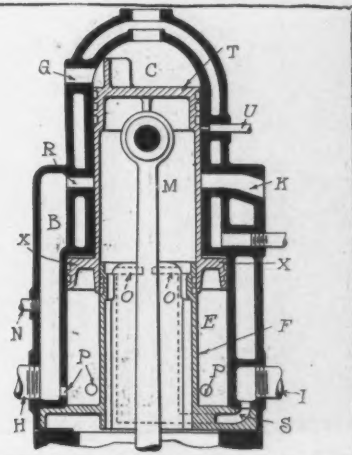


FIG. 4—NEW TWO-CYCLE MOTOR

ENDICOTT Uses Remy—A statement made by Motor Age in connection with the Vanderbilt cup race as to the magneto equipment of Bill Endicott's Cole proves erroneous. Endicott's car is fitted with a Remy, which is stock equipment.

Lajoie Wants Tag 385—State Registrar of Motor Cars Fred H. Caley, of Ohio, has received a request from a number of Cleveland baseball fans to secure for Napoleon Lajoie the number 385 for the coming year for use on his Chalmers given to him for his batting average of 385.

West Virginia Won Over—West Virginia is another of the states with which Ohio has adopted reciprocal relations as to motor car licenses. State Registrar Fred H. Caley has taken the matter up with the West Virginia authorities, with the result that cars bearing the tags of their respective states will be allowed to traverse the highways of the other state without molestation by the police authorities. Their registration laws are similar in many respects.

Columbus Show in Doubt—The committee of the Columbus Automobile Club named to arrange for the annual show at Columbus, Ohio, has been unable to find a suitable location so far, and there is some danger of the project being abandoned. A tentative date the latter part of January was set, and if a suitable hall can be secured the show will be held. The Columbus Auditorium, where the 1909 show was held, has since collapsed because of a heavy fall of snow.

Club Merger in Worcester—The governors of the Worcester Automobile Club of Worcester, Mass., at their last meeting voted in thirty-four candidates for membership, twenty-nine of whom formerly were members of the Hancock Club which recently voted to merge with the Worcester Automobile Club. The plan of taking over the Hancock club house at Lincoln square which was talked of by the officers and board of governors of the Worcester Automobile Club, has been dropped and the old quarters released with the addition of several more rooms. Included in the new headquarters will be two dining rooms, two

From the



AMES CAR ON 1,000-MILE TEST IN KENTUCKY

card rooms, women's reception room, women's dining room, reading room, billiard room, Dutch room, library and office, besides a large general reception room.

Ohio's Tag Order—The Ohio motor car department has received 15,000 sets of tags for 1911 and a separate department has been opened in the Harrison building, to be known as the shipping department. The distribution of the small numbers will be started soon after November 1. The 1911 tag is on a white enamel background with white letters and figures.

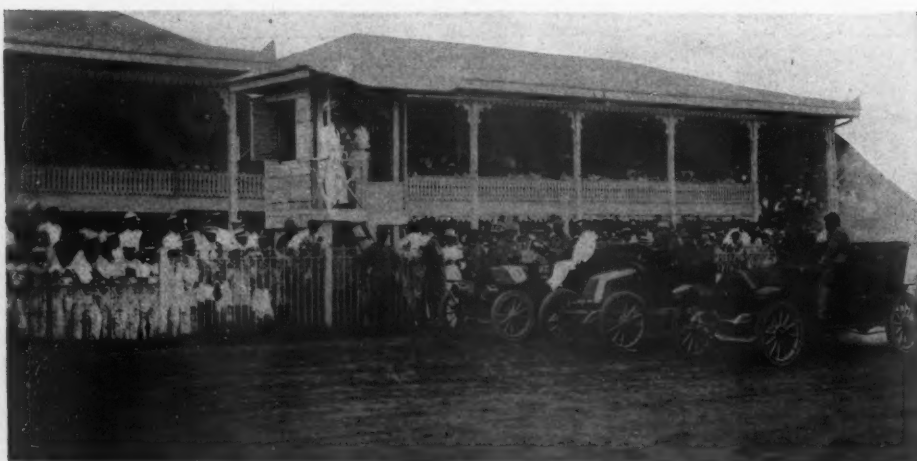
New Law in Indianapolis—A new traffic ordinance, similar to that in New York, Detroit and other cities, became effective in Indianapolis on November 1, but will not be enforced strictly until the public has become acquainted with it. About 10,000 copies of the ordinance are being handed out by members of the traffic squad to drivers of motor cars and other vehicles. It provides that traffic shall move according to whistle blasts, that pedestrians

must not stand in the street waiting for street cars and that a driver wishing to stop must notify those back of him by raising his right hand.

Hard Test of Ames—The Ames, a Kentucky-made car, recently completed a 1,000-mile test in the Blue Grass state which occupied 72 hours of continuous running. The roads were rough and sandy, but the car, carrying five, went through without mishap.

Richmond Clamors for Road—The chamber of commerce of Richmond, Va., is highly progressive, especially along the lines of good roads. A recent meeting discussed the proposition of building a motor car highway between Richmond and Washington. Nothing definite was done regarding the route, but the way of Fredericksburg, Staunton and Alexandria, following the Richmond, Fredericksburg and Potomac railroad is favored, which is a 2-day trip, but affording the best possibilities for building and beauty.

Syracuse's Signboard Work—In the work which the Automobile Club of Syracuse is doing in central New York, none is more productive of general good than the posting of route and danger signs. When the club first began this work its secretary, Forman Wilkinson, used to drive his car out into the suburban districts with these signs himself and personally superintend their erection. The scope of the work increased to an extent, however, which impelled the club to make permanent arrangements for the prosecution of this work. So, for the past year, Charles V. Webber, of the town of Joshua, R. F. D. Marcellus, has performed this work for the club. His old white horse and the wagon containing the signs form a familiar sight about the countryside. He has post-



FIRST MOTOR RACE IN MANILA, WON BY E-M-F

Four Winds



KENTUCKY ROAD AND AMES CAR ON LONG TEST

ed the country with the Syracuse club signs east to Utica, west to Auburn, south to Rexford Falls and north a considerable distance toward Watertown. The present plans of the club are to have Webber start out in the spring and liberally post the north country, there being no club there. The Automobile Club of Auburn proposes to carry on the work vigorously in its territory.

Club at Fitchburg—Prominent motorists of Fitchburg, Mass., have formed the Fitchburg Automobile Club. It is expected that more than 100 motorists will join the club. It will become affiliated with the A. A. A. and the Massachusetts State A. A. The officers elected were as follows: F. O. Hardy, president; W. Powell, vice-president; G. Upton, secretary-treasurer. C. B. Smith was chosen representative to the state and national bodies. The following directors were also chosen: Henry McGrath, G. P. Grant, Jr., Gardner Hudson, F. R. Houghton and David Low.

Delaware County Enthusiastic—The fifth annual meeting and banquet of the Automobile Club of Delaware County, Pa., an association that in the comparatively short space of 5 years has grown to be one of the largest and most influential motoring organizations in Pennsylvania, was held on Wednesday evening last week at the armory in Chester. This hustling association, organized in 1905 with forty-eight members, now numbers 550 and is still growing—all pulling together with the primary object of improved highways. The principal speaker of the evening was State Senator Sproul, the father of good roads in Pennsylvania, who dwelt on the growing interest all over the state in the matter of improved road-building and street-paving and roughly outlined proposed legis-

lation for better highways that will soon place the Keystone state in the foremost rank of this important work. Other speakers spoke in a similar vein. Officers for the ensuing year were elected as follows: J. S. Weeks, president; George A. Nitzsky, vice-president; Walter W. Hippert, secretary, and J. E. Mitchell, treasurer.

New Orleans After Show—New Orleans dealers are uniting with other motoring enthusiasts in planning a show for this winter. Date and place are not fixed upon, but it is probable one of the two race tracks will be the scene. The betting ring beneath the grandstand will afford ample room for exhibits of cars. Sundries will be exhibited in another big room, while the grandstand by day will accommodate the crowds desiring to view the races which are promised as a prominent feature. There has been plenty of show talk in years gone by, but never has it assumed tangible form. This time plans are so well along that a call has been issued for a meeting of the Progressive Union and

other commercial bodies of the city, the New Orleans Automobile Club, and other interests.

Booming Toledo-Detroit Road—A meeting was held at Monroe, Mich., last week, for the purpose of booming the proposed Toledo-to-Detroit highway plan. More than 100 persons, including the mayor, common council and prominent farmers, attended the session. It was announced that motor car manufacturers of Toledo and Detroit would contribute at least \$75,000 towards the project.

Haverhill Organized—At a meeting held at Haverhill, Mass., to form a permanent motor club to bear the name of that city, more than seventy owners of cars signed the roll. Then followed an election of officers with the following men chosen: W. W. Appleton, president; Dr. C. E. Durant, vice-president; F. S. Ball, secretary-treasurer; George E. Durgin, Dudley Hilliard, Elmer C. Bassett, Sam Jordan and John H. Bragdon, board of governors. Grant Fairbanks was chosen to represent the club at national and state meetings.

Omaha Show Dates—The Omaha Automobile Association met last week and arranged to hold the Omaha show for 1911 in the Auditorium, the week of February 20 to 26, which will be 2 weeks after the Chicago show. The association selected J. H. Deright, Clark G. Powell, Willard Hosford, Guy L. Smith and James T. Stewart directors of the show and Clark Powell was also elected secretary. Owing to the demand for space a second floor will be built across the balcony of the Auditorium, increasing the available floor space by half.

Racing in the Philippines—The first race meeting in the Philippines took place September 11 and brought out a large field of American and European machines. The track was slow and the cars were raced with full touring equipment, according to agreement, but the time made was exceedingly creditable. The main race of the day was for 7½ miles, and was won by an E-M-F 30 in 15:45%, a Renault and a Mitchell being the closest competitors. A Flanders 20 won in the runabout class.



VEHICLE USED BY SYRACUSE CLUB POSTING SIGNS



The Realm of the Commercial Car



GAGGENAU TRUCK ENGAGED IN MILITARY OPERATIONS IN AUSTRIA



FRONT VIEW ARMORED CAR

TRUCK MAKES LONG RUN

DEMONSTRATING the serviceability of the modern commercial vehicle for emergency work of a most extreme nature, a 1-ton Grabowsky power wagon, in charge of Sidney J. West of Detroit, has just completed a run from Detroit to New York, a distance of 1,000 miles. The car not only carried its full load capacity and three men, but had a considerable overload. It was driven by William Mulstay of New York, and was under the observation of William Baker of the Detroit Au-

tomobile Club. The roads, with the exception of 100 miles, either were very muddy or entirely submerged because of a recent downpour. In Ontario province, which was crossed from Detroit to Niagara Falls, miserable roads were encountered all the way and many detours through open fields were necessary. Fourteen miles west of Woodstock, in a large field, the car sunk to its hubs in the soggy soil, and chains were put on the wheels so that the car could pull out under its own power.

At Niagara Falls the car was held up by Uncle Sam's custom officers for an inspection of the load, and although Mr. West assured the officers that the bags and boxes of sand contained no diamonds, nothing but an examination would satisfy the officials. Considerable time was lost on this account and it was 5:30 Wednesday night when the Grabowsky pulled into Buffalo.

Good roads were found between Buffalo and Rochester, but after leaving the latter city it was almost as bad as in Canada. Through Montezuma marsh and along the roads paralleling the Erie canal, fully 100 miles were covered on low gear. Running down the Hudson valley, the same sort of travel was repeated, and a road near Birchfield that was closed for repairs caused them to go through a narrow back road, where five touring cars had been marooned for 5 hours.

The route book fixes the total distance



REAR VIEW ARMORED CAR

at 987 miles, but the detours forced the Grabowsky to cover an even 1,000 miles. The running time was 53 hours 5 minutes, which is an average of 18.6 miles per hour. The trip was made on 99 gallons of gasoline, 19 pints of oil and 7 pounds of grease. No repairs were made, and the only replacement was a spark plug.

MOTOR VANS FOR ARMY WORK

A special type of motor van recently created by the Süddeutsche Automobilfabrik, Ltd., of Gaggenau, Badenia, is being



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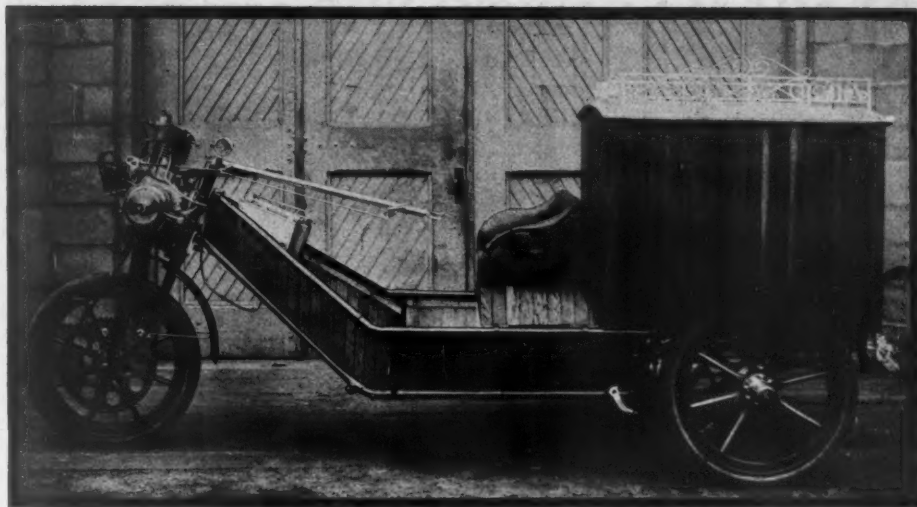


used in the Tyrolean Alps at the Austro-Italian frontier, for supplying building materials to the huge fortifications of the Austrian war department there in course of construction. Exceptional requirements had to be complied with in this case. In fact in addition to carrying up to 8 tons, the motor car had to haul trailers up to 17 tons in capacity, thus allowing a total of 25 tons to be transported at a time. Considering that the vehicles are only equipped with a motor of the standard type subventioned by the German army, this may indeed be called a remarkable performance.

As the vans are used for transporting heavy cement barrels, armored plates and similar materials, the tractor is equipped with a motor-driven crane for loading and unloading. Moreover, a cable drum, likewise driven from the tractor, is actuated whenever, because of especially heavy gradients or other difficulties of the road, the tractor is unable simultaneously to haul the trailers. In such cases the tractor advances separately, and drags the trailers after it by the aid of cables wound over the drum. The results thus obtained in actual operation are really surprising, exceeding by far any expectations. There seems to be no difficulty for the motor van which, up to effective loads of 25 tons, readily negotiates gradients so far considered as impracticable.

NEW TYPE OF TRI-CAR

The latest acquisition to the motor car industry in the Nutmeg state is the Maxim tri-car built by the Bushnell Press Co. of Thompsonville, Conn. This tri-car, which has the single driving wheel placed in front, is the design of Maxim Karminski, a French motoring engineer, and of George Peters. A feature of this Maxim tri-car, which is adapted to business or pleasure, is that the power plant is one complete unit, that is to say, the motor and two-



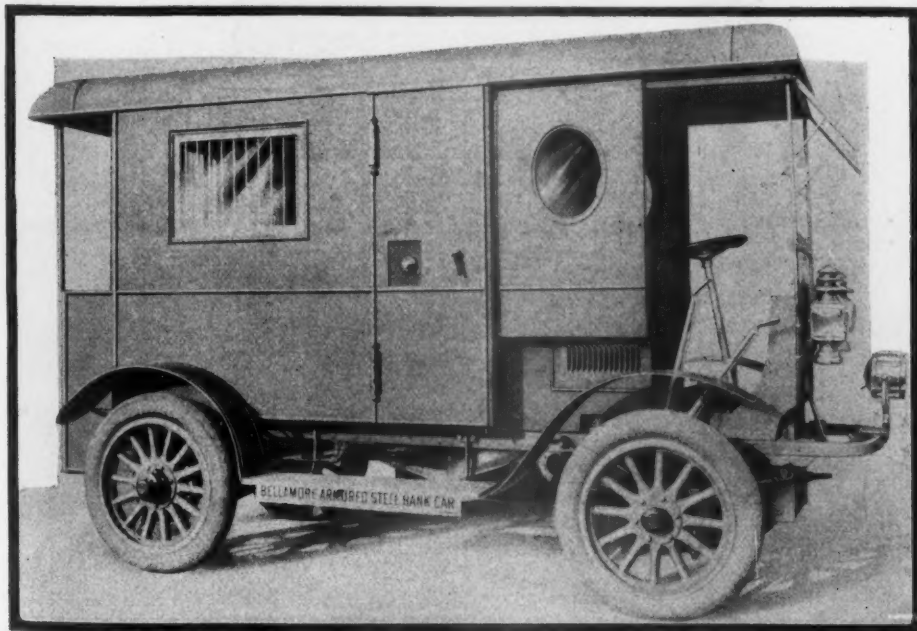
MAXIM TRI-CAR PUT OUT BY HARTFORD CONCERN

speed and reverse planetary transmission are mounted on a movable platform over the front wheel fork. This platform is so designed as to compensate for road shocks. The front fork also is so built as to relieve the engine of all strains incident to rough roads. The car at present is equipped with a single-cylinder air-cooled motor having an automatic inlet. The transmission is carried to the left of the motor crankcase and is controlled by a horizontal grip in the steering handle, which is a 1½-inch tube. To engage the high-speed gear and lock it in position requires but a slight turn of the wrist to the right, to engage the low-speed implies a like movement to the left. Drive is from a small sprocket on the countershaft to the large sprocket on the front wheel. To relieve shocks imposed on the driving chain, which necessarily would be transmitted to the engine, a small sprocket idler, provided with a spring device, is placed below the motor bed. The entire front wheel with driving elements may be

taken out as one unit and another similar member installed. The frame of the car is built of 1½ steel tubing welded and brazed, and the top and bottom members curve upwards forward and are joined to a tubular upright similar to the head of a bicycle, this member being slotted for the admission of the front wheel bearing, which is made with a bayonet lock. The fuel tank, triangular in design, is carried forward in the frame and is fitted with a pressure pump. The body is of box design.

NOW THE ARMORED CAR

Something new in the commercial realm is the Bellamore armored motor car manufactured by the Bellamore Armored Car and Equipment Co. of New York city. It is an armored steel vehicle protected by a patent system of electric alarms so that in case an attempt is made to break into it powerful alarm is set in motion. The walls and roof are built of steel, hardened insulating material, and hard wood. The body also is fireproof and, it is claimed, could not be destroyed by fire. The body is an inclosed structure divided into two distinct sections, the front part for the driver and passenger and the rear containing the banking rooms. Two doors, one on each side of the car, give access to the driver's section and one door on the right-hand side opening inwardly gives entrance to the banking room. At the rear of the car is a vestibule which serves to give privacy and protection to customers while transacting business. The interior arrangement of the banking room includes a large steel safe, while a desk or counter extends the full width of the car under the cashier's window and contains the money drawers. There are two types of engines used. One of them is a four-cylinder of 40 horsepower, and the other is a two-cylinder double opposed of 20 horsepower. This vehicle is designed for the use of bankers or big corporations transporting money through the streets. It is pointed out that such a vehicle is of great convenience to railroads as a pay car.



EXTERIOR VIEW OF BELLAMORE ARMORED CAR FOR BANKING USE

REMY MAGNETO FOR 1911 MADE IN TWO MODELS

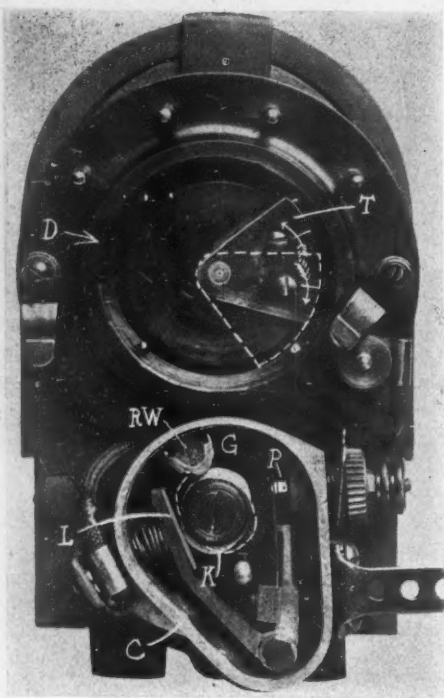


FIG. 1—FEATURES OF 1911 REMY

IN THE 1911 Remy magneto, which are made by the Remy Electric Co., Anderson, Ind., there is to be found a number of improvements, but no radical changes. The 1911 line will consist of two models, types S and T as manufactured during the 1910 season. Both will be identical in construction except that the type S machines will be larger and have three sets of magnets, whilst the type T will have but two sets of magnets.

The improvements in the new model show that the success of the apparatus has been carefully watched and an examination will disclose several slight changes in constructional details and refinements in the workmanship and finish that will add greatly to the efficiency and general appearance of the product. One of the most noticeable improvements is to be found in the distributor box D, Fig. 1; the revolving segment T now being so designed that with the circuit-breaker box C in a retarded position, all possibility of a back-kick is eliminated when pumping of the starting crank is employed to start the engine. Fig. 1 shows the distributor segment T revolving in a clock-wise direction with the circuit breaker box C in fully retarded position. This is the actual condition when the piston of the cylinder is on top dead center just commencing the firing stroke. A slight further movement of the crank will cause the platinum contacts P to break the circuit and a spark will be produced at the plug of this cylinder.

Supposing a person cranking such a motor does not crank it over far enough to produce this spark, but due to the high compression of the motor the crank is allowed to rock back, then a spark will be produced when the contact of the

platinum points is broken by the trailing edge of the circuit-breaking cam K as the motor rocks back. This break of the contact points occurs approximately 60 degrees before dead center, as indicated by the dotted outline positions of the cam and distributor segment; here the platinum contact points are shown as just having separated and the distributor segment is opposite the high-tension point leading to the spark plug of the cylinder, which is on the exhaust stroke, and there is no possibility of a spark occurring in the cylinder which is under compression.

Another notable feature in connection with this segment is that the magneto may be timed to run either clock-wise or anti-clock wise without its removal, it being merely necessary to mesh the timing gears with the magneto so that the line corresponding to the direction of rotation, as indicated by the arrows, will register with the proper high-tension points.

An important improvement also is to be found in the circuit-breaker box C, an automatic oiling device for the hard steel circuit-breaking cam K and cam plate L has been provided. It consists of a felt wick RW saturated with oil and adapted to be held in rolling contact with the cam by a cage G attached to the breaker-box. This wick is intended to cover the cam K with a thin film of oil at all times, thereby reducing the wear of these parts to a minimum. All other bearings of the magneto are to be lubricated from a centrally-located oiling receptacle which is conveniently placed over the driven end of the apparatus, and a new spring snap hinged lid covers this receptacle to insure freedom from dust and foreign matter. Stamped upon this cover are explicit in-

structions relative to the proper lubrication of the device. In the side sectional view of the apparatus Fig. 4 the lubricating facilities are very clearly shown.

To oil the magneto one has but to lift the cover C, which is hinged at E, and pour a supply of oil into the receptacle R. This oil will flow through the ducts D, D1, D2 and D3, conducting oil to receptacles L and wicks W from which lubrication of the distributor shafts DS and rotary shaft S respectively is maintained. The roller wick RW, of course, which lubricates the cam K, must be independently saturated.

Among other improvements the circuit-breaker-box cover-lock has been simplified so that inspection of the circuit-breaker is facilitated. A slight change in the design of the coils used in connection with these magnetos renders it possible to use a storage battery for starting purposes without injury to the platinum contact points, a feature which makes possible the use of electric lighting batteries for both lighting and ignition purposes, thereby eliminating the necessity of carrying an extra set of cells where lighting batteries are employed. The three-wire cable from the coil box has been provided with a brass diverging device to hold the three wires out at the proper angles for connection to the magneto to prevent fraying of the insulation. A slight change is to be found in the gear case design which facilitates access to the magneto gears; the general workmanship and finish is of a high grade; and these, in addition to a slight change in design, which has closed up the gap between the distributor and gear case, brings about a vast improvement in the appearance of the product.

Details of the mechanical construction

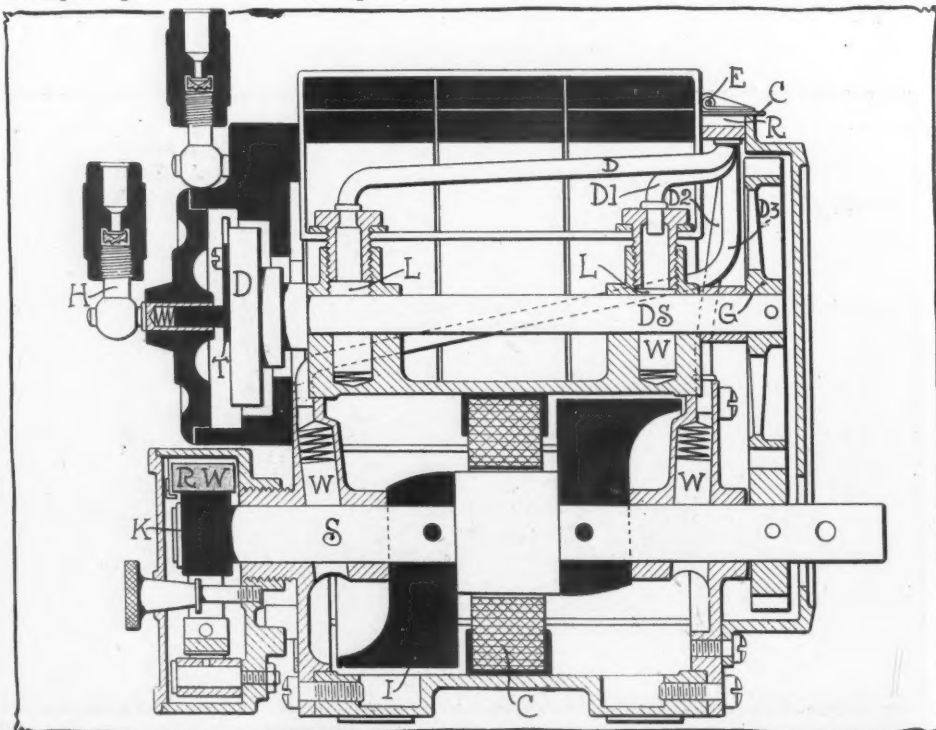


FIG. 2—SIDE SECTION OF 1911 REMY MAGNETOS SHOWING DETAILS OF THEIR CONSTRUCTION

of the Remy magneto are very clearly shown in Fig. 2; it has a stationary winding C which does away with moving contacts in the primary circuit. This winding consists of a single coil of No. 18 magneto wire which is embedded in the pole piece. The rotative part, or inductor 1, is a simple forging mounted upon a solid steel shaft S. At each half turn or revolution the direction of flow of the lines of magnetic force through the coil C is alternately reversed, inducing in the coil two electrical current waves or impulses for each revolution. The magneto winding is directly connected through the magneto current-breaker with the primary winding of the induction coil which is used with the magneto and generally located on the dash of the car. The circuit is mechanically broken at the points P, Fig. 1, during the current wave, which endures throughout over 45 degrees of the inductor's revolution.

The timing of the spark is accomplished by shifting the circuit-breaker around the armature shaft to which is attached the circuit breaker cam K. The distributor D of the magneto and its 2 to 1 driving gear C at the opposite end of the apparatus, is for the purpose of distributing the current after it has been sent to the coil and transformed to the high voltage which is required at the sparking plug; this high-tension current enters the distributor through the connection H. For each revolution of the magneto inductor this cable carries two high-voltage current impulses to the distributor, and as the fan-shape distributor segment T is making one revolution to two of the magneto inductor it can in turn deliver a spark to each of the four cables leading from the distributor to the spark plugs each time the magneto inductor makes two complete revolutions. Therefore, the magneto inductor with a four-cylinder four-cycle engine always must be driven at twice the speed of the engine camshaft or the same speed as the crankshaft. With a six-cylinder four-cycle engine the magneto distributor is back-gearred with a ratio of 1 to 3 and the magneto must be driven at three times the speed of the camshaft or one and one-half times the speed of the crankshaft.

With a two-cylinder four-cycle opposed

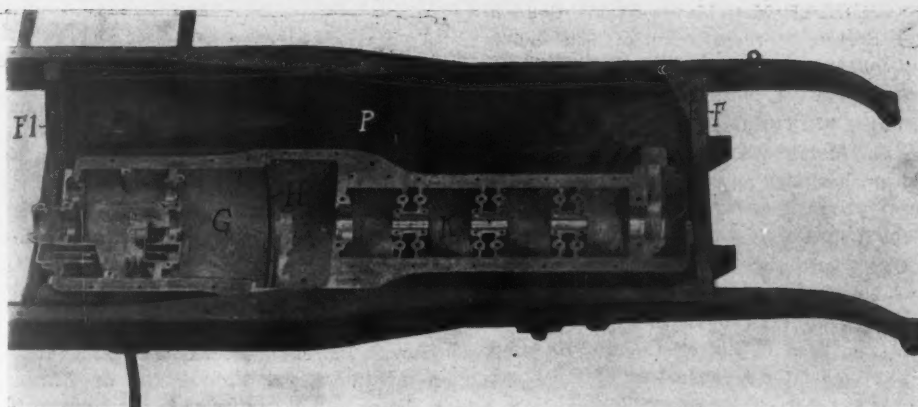


FIG. 3—SOD PAN USED ON THE CORBIN

engine the magneto does not have a distributor and a single cam is furnished on the magneto, causing but one electrical impulse for each revolution of the magneto inductor. The magneto must then be driven at the same speed as the crankshaft of the engine.

The special spark coil furnished with the magneto is fitted with a two-point switch used to change from battery to the magneto or vice versa, or disconnect from either to stop the motor. The switch also is provided with a push button, for the purpose of starting the four-cylinder or six-cylinder motor from the spark by pushing the button, when the switch lever is turned to the battery side. This system makes starting without cranking most reliable, for the reason that the coil is particularly suited to the magneto, which is not injured by large current consumption, as has been the case when batteries were regularly used. When the battery is in use with the coil, it will be understood that the battery current is simply turned through the coil and distributor of magneto instead of the magneto current. It is intended that batteries be used for starting and relay, although the magneto is regularly used.

Corbin Sod Pan

The question of affecting the motor and under parts from mud has been a problem which many manufacturers have worked for several seasons with different degrees of success. On the Corbin car sheet steel pans P Fig. 3 are used, one at each

side of the crankcase casting. These pans are riveted along the lower flange of the side members of the frame and extend from the front cross member F to a similar cross member S1 in rear of the gearbox. This pan on either side extends inward to the crankcase and gearbox, where they are fastened. The lower half of the crankcase K, and the gearbox G are bolted together at H, which is just beneath the flywheel, there being a part of the crankcase which forms a housing for the flywheel. The rear of the transmission case is hung at a central point to a cross member of the frame, while the front of the motor is supported on an I-section forging, which extends to both side members of the frame. In this manner a three-point suspension is obtained and additional rigidity is added to the entire construction by the motor pans, which at the same time prevent any road splash or dust working up into the motor.

New Franklin Racer

The H. H. Franklin Mfg. Co. has just delivered to Ralph C. Hamlin, the Franklin dealer of Los Angeles, Cal., the first of a limited number of special speed cars, Fig. 4, which the local concern intends to build. This new motor vehicle is a two-passenger, turtle-back torpedo Phaeton possessing flush sides and high doors. It is equipped with a four-cylinder Franklin motor, air-cooled, with a 4-inch stroke and bore. Both front and rear tires are 34x4½ inches in size. The weight of this new speed car is but 1,900 pounds.

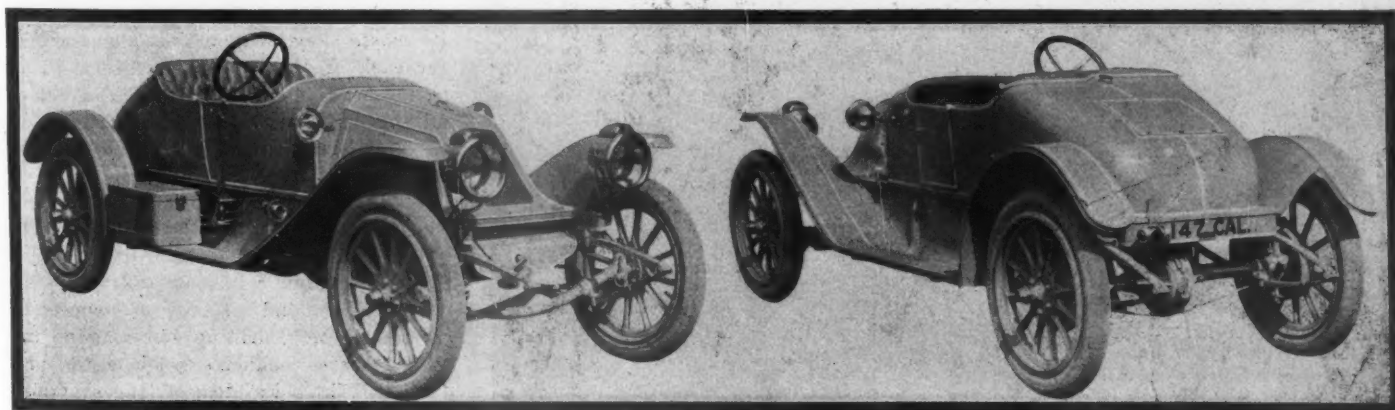


FIG. 4—SPECIAL SPEED CAR TURNED OUT BY H. H. FRANKLIN MFG. CO.

Schebler Man Moves—W. J. Connell, Boston representative of the Schebler carburetor, has removed to 555 Boylston street.

Vogel With Blue Book—Lewis G. Vogel of Philadelphia, formerly connected with Power, has been appointed advertising representative of the Automobile Blue Book Publishing Co.

Car Plant for Mansfield—C. R. Forth and M. G. O'Brien, of Mansfield, O., have arranged to take over the plant of the Bucyrus Steam Shovel Co. in Bucyrus, O., and start the manufacture of the Forth motor car.

Operates Own Branch—The Reliance Motor Truck Co. corrects a statement published in Motor Age to the effect that the Butler Motor Car Co. of Boston has taken the Reliance agency. The Reliance company maintains its own branch in Boston.

Quits Making Motor Boats—The motor department of the J. I. Case Threshing Machine Co. of Racine, Wis., which was formerly the Pierce Motor Co., has decided to discontinue the manufacture of motor boats and marine engines in order that the big plant may be utilized exclusively for the construction of Case motor cars and aeroplanes.

Merriam Joins Warner—The Warner Instrument Co. of Beloit, Wis., maker of the Warner Auto-Meter, will conduct its advertising from its New England offices, 925 Boylston street, Boston, after December 1. The advertising and the New England territory will be in charge of W. A. Merriam, who leaves Lord & Thomas to assume this position.

Pittsburg Show Committee—The Automobile Dealers' Association of Pittsburg has named the following committee to arrange for the 1911 show at Duquesne garden: Robert P. McCurdy, chairman; A. X. Phelan and F. D. Saupp. W. N. Murray, president of the association, will be the ex-officio member. A special meeting will be held this week to arrange for the draw-

Among the Makers

ing of space among the dealers. It is possible that the 1911 show will be held in the exposition building at the point, owing to the fact that last year's show taxed the capacity of Duquesne garden to the limit, and the prospects are still better for the coming exhibit.

Royal Increases Stock—The stockholders of the Royal Rubber Co. of Akron, O., have voted to increase the concern's capitalization from \$50,000 to \$200,000. The company purchased the old Buckeye reaper plant several months ago and will enlarge its factory space. The company is experimenting with tires and will manufacture them.

Fire in South Bend—Damage to the amount of \$8,000 was done at the plant of the Diamond Automobile Co., at South Bend, Ind., recently. Thirty-two bodies, wheels and other parts were consumed. The loss is partially covered by insurance. The company is installing a steam-heating plant and a gasoline torch being used in the paint shop was accidentally overturned in a body and inflammable material at once ignited. The flames were confined to the one-story building where they originated.

Working on Thomas' Building—Work on the many new buildings devoted to the motor industry now in the course of construction on Boylston street, Boston, is being pushed as rapidly as possible previous to the cold weather setting in, and especially is this noticeable at the new home of the Thomas, where fifty workmen are making rapid progress. This building will be a model of its kind, having many valuable features now installed for the first time in a New England motor car building. These include electric automatic dumb waiters, with an opening on each floor for the quick handling of supplies

and parts; washstands with the grades below the floor level, allowing cars to be handled readily by one attendant; air pressure on each floor for tires and cleaning chassis or parts, and a vault for the storage of furs. It is expected to be ready for occupancy by January 1.

More Rambler Buildings—Five new buildings are now being added to the plant of the Thomas B. Jeffery Co. at Kenosha, Wis. The new power plant is practically completed. Additions are constantly being made to the working force. Large additions have been made during the summer to the machine shop, motor assembly and inspection department. With all of these additions and improved facilities the Rambler output for 1911 is again limited to 2,500 cars.

Hudson in New Home—It was moving day for the Hudson Saturday, when the company moved into its new plant. A private locker of steel is provided for each employee. Sanitary drinking fountains are scattered throughout the immense concrete buildings, Rest rooms for the women, smoking rooms for the men, dining rooms for all, shower baths, recreation grounds and, best of all, perfect illumination, ventilation, and heating go to complete the details that make the Hudson factory one ideal in working conditions. The plant consists of the main building, 610 by 60 feet, one wing, 410 by 60, another 210 by 60, and the offices, which are 180 by 52. All buildings are two stories high. The windows have the Fenestra steel sash and are so plentiful that the glass area in the walls comprises 90 per cent of the total area. Ribbed glass has been used to diffuse the light so that the strong glare of the sun might not hurt the workmen's eyes. The experimental room was equipped almost entirely by Howard E. Coffin, the chief engineer and designer of all Hudson models. All electric wires are run in steel conduits with conduit fittings. Special attention was given the hardware used in the building. For the offices statuary bronze with satin finish has been used throughout. Every department has its master key, with a grand master key for each of the executive officers. That is, the head of one department can unlock all the doors in his own department, but the grand master key unlocks anything in every department. Every workman has a metal bench drawer with his own key. The benches are specially designed with maple tops, shellaced and varnished. Five electric elevators with a capacity of 8,000 pounds apiece and a system of compressed air for riveting, drilling and reaming are other features conducive to low cost of production. The old system of long shaftings has been displaced by electric drives and the short shaftings are on the Hyatt roller



REG ENGINEERING BUILDING—MATERIAL TESTING LABORATORY

and Dealers

bearings further to cut down power consumption. A special overhead crane picks up cars and carries them to the paint shop in 3 minutes. By the old method an old set of wheels had to be put on the car to get it to the paint shop. That took 30 minutes and the service of four men. Mr. Coffin's new device alone will save \$6,000 every 6 months. The capacity of the plant with no attempt to hurry is sixty Hudson cars a day.

Makes Motor Look Good—That the use of a motor fire insurance patrol is largely responsible for the decrease in the fire losses in Milwaukee, Wis., since January 1 was the statement of the officials of the Milwaukee board of fire underwriters at the annual meeting. There were more fires, but the losses were far below last year. The patrol in use is a Knox truck. The report of the secretary showed that the operation of the truck cost 10 cents a mile, as compared with 25 cents a mile when the service used horses.

Reo Engineering Building—With the finishing touches put on the new Reo engineering building this week it completes one of the most modern and thoroughly equipped motor car engineering plants in this country. It is a three-story building, 65 by 120 feet, exclusive of basement, constructed of reinforced concrete and brick, making it thoroughly fireproof. Each floor is served with a large electric elevator, which is capable of carrying the largest motor vehicle that it may be necessary to build. Among the many unique and practical features of this magnificent building is a fully equipped machine shop, capable of building complete cars. It also contains gas furnaces for hardening and heat-treating steel, together with ox-acetylene welding outfits. There is a well-lighted and commodious laboratory for each division of the engineering department, each of which is provided with the latest appliances. One of these is a large Rhelie testing machine capable of exerting a pressure or pull of 50 tons, the office of this mammoth and powerful machine being to test the material that enters in the construction of every Reo. An opposite to this Rhelie testing machine is found in a set of chemical balances capable of weighing even so small a quantity of lead as is used in writing a name on a piece of paper. Ample provision is also made in a large fireproof vault for the storage of engineering records. In another section of the building there are two well-lighted drafting rooms, besides which there are two large rooms for general work and for new and experimental work, the latter being clearly prophetic of still further progress and improvement in Reo cars, if, indeed, that were possible. Storage facilities

are also provided for patterns, castings and complete experimental machines, the latter being made easily accessible for future use. This new engineering building has a floor capacity of 31,200 square feet.

Will Make Tops—The Marshalltown Buggy Co., of Marshalltown, Ia., is making arrangements to enter the top manufacturing business and is now equipping a portion of its plant to devote to this industry. F. E. Gates, vice-president of the concern, has sold his interest to L. M. Osborne, president of the company, and will leave for Indianapolis, where he will engage in the top manufacturing business.

Parkersburg a Bidder—The board of trade of Parkersburg, W. Va., is negotiating with the Auto and Motor Casting Co., of Cleveland, Ohio, whose works are at Chagrin Falls, Ohio, for the removal of that concern to Parkersburg. The company wants a floor space of 10,000 square feet, and will have a yearly payroll of \$300,000, mostly skilled labor. It asks no bonus, but would like to sell \$15,000 worth of 7 per cent accumulative preferred stock at a trifle above par.

Will Make Bicycles—Some surprise has been caused by the announcement that A. D. Meiselbach, president of the A. D. Meiselbach Co. of North Milwaukee, Wis., motor truck and wagon builder, has decided to begin the manufacture of bicycles. Up to 10 years ago Mr. Meiselbach operated an immense bicycle plant at North Milwaukee, employing 1,075 men and turning out 1,000 machines per day. He sold to a syndicate and agreed to remain out of the bicycle business for 10 years. The time has now expired. Mr. Meiselbach proposes to the Business Men's Association of North Milwaukee to employ 500 men and turn out 250 bicycles

daily if granted a site for a factory. The present factory is used for motor truck building.

Join Pittsburg Association—The W. W. Bennett Motor Car Co. has been admitted to membership in the Automobile Dealers' Association of Pittsburg.

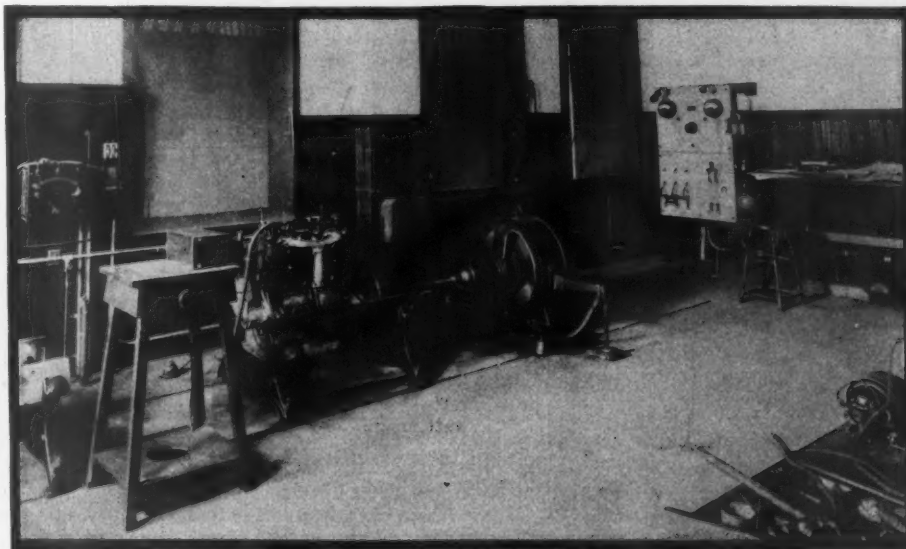
New Knox Publicity Man—Albert H. Doolittle has been appointed publicity manager and assistant advertising manager of the Knox Automobile Co., Springfield, Mass.

Fitting Up Tire Plant—The work of installing the machinery and equipment in the plant of the Kelly-Racine Rubber Co. at Racine, Wis., is well under way. The new plant will cost \$500,000. It is hoped to begin the manufacture of tires on December 1.

Mitchell Exportations—Two hundred Mitchells will have been exported to Europe alone by the Mitchell-Lewis Motor Co., of Racine, Wis., before the end of this month. Two carloads have been shipped to Havre, three to Paris and three to London, and these will be followed by other shipments as fast as it is possible to produce the cars.

Montreal Show Dates—The Montreal motor car and motor boat show, under the auspices of Automobile and Aero Club of Canada, will be held from April 1 to 8 next in the Coliseum building, the same building as used last year. It will be managed by E. M. Wilcox, manager of Toronto motor show, to be held February 25 to March 4, whose office is at 123 Bay street, Toronto.

Buys Plant at Eau Claire—The Templeton-Barrett Co. of Marinette, Wis., has purchased the plant of a concern at Eau Claire, Wis., which manufactures a new type of composition spark plug. The machinery and equipment has been moved to Marinette and now occupy the former pattern works of the Templeton-Barrett Co., which has been manufacturing kitchen utensils and similar ware on a large scale.



REO ENGINEERING BUILDING—MOTOR TESTING LABORATORY

PORTLAND, Ore.—The Landy Automobile Co. has secured the Napier agency.

Dayton, O.—The Standard Motor Co. has added to its list the agency for the Kelly truck.

Klamath Falls, Ore.—Dr. F. M. White now has the agency for the Cole 30 in this section.

Milwaukee, Wis.—The Hickman-Lauson-Diener Co., Milwaukee, agent for the Ford, has been appointed general agent for Wisconsin.

Rochester, N. Y.—F. R. Luescher, dealer in Rambler and Herreshoff motor cars, has established himself in new quarters in the heart of the business section, at 66 North street.

Boston, Mass.—The Velie Motor Vehicle Co., through its Boston branch, during the past week, has closed with the Motor Mart garage, of Portland, Me., and with Arthur G. Beharrell, of Lowell, Mass.

Memphis, Tenn.—The Stewart Automobile Co., a partnership between R. G. Stewart and H. A. White, has opened for business in the large garage, 265, 267 and 269 Monroe avenue. It will sell Pierce-Arrows.

Cleveland, O.—The Owners Garage Co. has been incorporated with an authorized capital of \$15,000 to operate a garage and repair shop by Frank H. Ginn, Frank C. Newcomer, Gardner Abbott, Grover Higgins and G. M. Cummings.

Cleveland, O.—The Sharp Spark Plug Co. of Cleveland has been incorporated with a capital of \$10,000 to manufacture and sell spark plugs and other accessories for motor cars by J. F. Johnson, F. D. Johnson, John Sharp, William Sharp and W. W. Turney.

Eau Claire, Wis.—The Tanberg Automobile Co., one of the largest agency concerns in Wisconsin, has revised its plans for the new garage and salesrooms to make the building one of the largest of its kind outside of Milwaukee. It will be 66 by 125 feet in dimensions and two stories high.

Columbus, O.—The Cummins Auto Co., located since September 1 on Fourth street near Spring street, has taken the agency for the Elmore in seventeen counties in central Ohio. F. S. Cummins is president and general manager of the concern. Sub-agencies have been closed in central Ohio as follows: Gage & Mason, Delaware; T. J. Burrer & Sons, Sunbury; James W. Daugherty, Logan.

St. Louis, Mo.—A modern garage building has been erected by the Pope-Hartford Motor Car Co. of St. Louis as headquarters for Pope-Hartford motor cars in that city. The new building is constructed of reinforced concrete and steel. It is two stories high with provisions for additional stories, if necessary. The building is equipped with a large garage, an oil house and engine room, a complete repair shop with modern machinery and a separate store for the sale of sundries. The ga-

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rage proper measures 50 by 160 feet. The whole plant represents an investment of over \$100,000.

Hook River, Ore.—E. T. Lisco is having a three-story garage built at a cost of \$14,000.

Seattle, Wash.—R. D. Stanley is now a copartner with H. Dovey in the Seattle agency for the Duro car.

Columbus, O.—W. E. Evans & Co., located on North Fourth street, has taken the central Ohio agency for the Baker electric.

Boston, Mass.—The Cole agency in Boston has secured J. S. Bradfield as one of its salesmen. He was in the newspaper field in New York and Boston for 8 years.

Indianapolis, Ind.—Frank B. Willis, manager of the Studebaker Brothers' Indianapolis Co., has just announced the appointment of F. W. Haile as city sales manager.

Columbus, O.—Herman Eckhard, who was the Columbus sales agent for the Columbus Buggy Co.'s motor car department for several years, has severed his connection with that company and is now connected with the Early Motor Car Co.

Cleveland, O.—The Empire Rubber Co. has been incorporated with an authorized capital of \$250,000 to manufacture all kinds of rubber articles, including tires by Frank R. Howells, John F. Christian, Carl W. Parker, Fred J. Ackerman and Charles F. Haas.

Hartford, Conn.—Richard C. Skinner, formerly connected with the sales department of the Fisk and other tire companies, has joined the Shawmut forces and has as territory part of New York state, western Massachusetts and Connecticut. For the present he will make his headquarters in Syracuse.

Philadelphia, Pa.—The Stewart & Clark Mfg. Co. of Chicago, manufacturer of the Stewart speedometer, has opened a Philadelphia branch at 608 North Broad street, F. R. Hill being appointed manager. The new branch will have jurisdiction over eastern Pennsylvania, District of Columbia, Maryland, Delaware and southern New Jersey.

Peoria, Ill.—Announcement is made of the organization of the Superior Motor Sales Co. of St. Louis, Mo., and Peoria, Ill., with a capital stock of \$75,000. The new company will represent the Stoddard-Dayton and Courier lines in quite an extensive territory, and takes over the motor car department of M. M. Baker & Co., occupying the latter's store at 2007 and 2009 Locust street, St. Louis, and also the new building erected specially for the purpose at 619 and 621 Main street, Peoria, Ill. M. M. Baker heads the new or-

ganization as president and treasurer, and the other officers are O. L. Garrison, Jr., vice-president, and H. B. Baker, secretary.

Detroit, Mich.—The Auto Equipment Co. has increased its capital from \$50,000 to \$75,000.

Pittsburg, Pa.—The Penn Motor Car Co. has been organized at Pittsburg by William M. Ewing, John W. Kerrin, H. E. Herrington and others, of this city.

Waterloo, Ia.—N. I. Taylor, for the past few years advertising manager of the Regal Motor Car Co., Detroit, Mich., has resigned and accepted the position of sales and advertising manager of the motor car department of the William Galloway Co.

Columbus, O.—D. W. McGrath has been awarded the contract for the construction of a garage and store buildings to be erected at Fourth and Chestnut streets by Dr. W. D. Hamilton. The cost of the structure will be in the neighborhood of \$50,000.

Minneapolis, Minn.—The Hollis Electric Co., jobber and manufacturers' agent, now located at 9 North Sixth street, has signed a long time lease for a building to be erected at 12 South Eighth street, just off Hennepin avenue. The building is to be entirely completed by February 1.

Los Angeles, Cal.—Because of the addition of the Columbia to his line of Maxwell cars, J. S. Conwell, manager of the United Motor-Los Angeles Co., has been forced to change the plans for his new building, which will be erected at Twelfth and Olive streets. The plans now call for a building containing three stories and basement. The

Recent Incorporations

New York—Lovelace-Thompson Aeroplane and Motor Works, capital stock \$100,000; to manufacture motor cars, aeroplanes, etc.; incorporators, R. L. Offett, N. A. Egbert and M. Ogg.

New York—Cross-Magill Motor Truck Co., capital stock \$100,000; to manufacture motors, motor vehicles, etc.; incorporators, C. J. Cross, W. F. Magill and P. S. Tilden.

New York—Progress Automobile Storage and Supply Co., capital stock \$12,000; to deal in, rent and store motor cars, etc.; incorporators, Milton N. Goldsmith, Charles M. Rosenthal and Nathan D. Leiman.

New York—F. and F. Radiator Co., capital stock \$6,000; to manufacture motor cars, accessories, hardware, machinery and supplies; incorporators, Joseph Farber, George De Fevre and Abraham Kempler.

New York—Burglar Alarm and Automobile Bell Mfg. Co., capital stock \$100,000; to manufacture and sell alarms, signals, etc.; incorporators, W. A. Boeckel, S. Tekusky and J. H. Hopkins.

New York—Metropolitan Mercantile Motors, capital stock \$50,000; to manufacture, sell and repair carriages, motor vehicles, etc.; incorporators, D. Campbell, F. G. Lyon and H. S. Reynolds.

Long Island, N. Y.—E-Z-Way Motor Grease Co., capital stock \$100,000; directors, William E. Dunn, Christopher F. Hille and F. J. Cullingworth.

Asbury Park, N. J.—Barnes Automobile Fender Co., capital stock \$250,000; to manufacture motor car fenders; incorporators, W. D. Barnes, M. F. Thomas and W. H. Bechtel.

Asbury Park, N. J.—Premier Machine Co., capital stock \$100,000.

Announcements

addition will give 5,300 more square feet, making the total of 21,200 square feet for the building.

New York—Arthur C. Warren has joined the sales force of the Pope-Hartford Auto Co., 1930 Broadway, New York.

Kenton, O.—A tire repairing and vulcanizing shop has been opened by O. E. Bonnell, who recently came here from Wauseon, Ohio.

Springfield, Mass.—Manager Wiggin, of the Ware Automobile Co., plans to build a two-story brick block, 50 by 80, at the corner of West Main street. The first floor will be used by the Ware Automobile Co. for a garage.

Buffalo, N. Y.—The American Motor Sales Co. of Erie, Pa., hereafter will handle the Thomas Flyer in that territory and Bruce C. Edenton of Jackson, Tenn., will look after the sales end of his section of Tennessee.

Syracuse, N. Y.—The Overland Syracuse Co. has just been formed in this city to represent the Overland. John W. Lee, president and general manager of the new company, has just completed arrangements for a four-story building at 319-321 East Genesee street.

Seattle, Wash.—The first exclusive truck garage to be built on the Pacific coast has just been completed at Seattle and will be occupied this week by the Rapid and Gleason truck agency, owned by W. H. Barnes. The building is especially equipped throughout for the handling of motor trucks, the equipment including steam boilers, which have been placed in

the cleaning room to be used in cleaning the engine of every truck at the end of the day's run.

Johnstown, Pa.—The Johnstown Automobile Co. has increased its capital from \$10,000 to \$100,000.

Berlin, Wis.—A new garage is being erected by Frank Russell adjoining the plant of the Russell Glove Co. It is of fireproof construction and the outside is finished in white glazed brick.

Lima, O.—The Mans Brothers Auto Co. has been incorporated with an authorized capital of \$5,000 to operate a sales agency and garage by H. P. Mans, A. D. Mans, N. F. Hall, F. H. Mans and R. G. Alberding.

Wilmington, Del.—H. Kelly, formerly connected with the Charles Warner Co., has become manager for the T. C. Bradford Automobile Co., which has its salesroom and garage at Delaware avenue and Tatnall street.

Washington, D. C.—The Barnard Motor Car Co., agent for the Stoddard-Dayton and Courier, has leased the building at 1612 Fourteenth street, N. W., and after extensive improvements have been made will occupy it as a salesroom.

Boston, Mass.—George W. McNear, the body builder, has secured a long lease of the big five-story structure adjoining his present location for additional facilities. He has been obliged to install a metal body plant to his equipment.

Minneapolis, Minn.—Work on the building for the Fawkes Auto Co. at Hennepin and Erie street was started last week. It will be a solid concrete structure, two stories high with basement. The structure will be ready for occupancy January 15.

Greenville, Pa.—The Greenville Automobile and Metal Products Co. has started its new plant. All of the machinery is not secured yet, but work will be well under way in several departments this week, including the front axle department. About fifty men will be employed at the start.

Philadelphia, Pa.—The Franklin hereafter will be represented here by the Clay Motor Car Co., which will shortly open headquarters at 447 North Broad street. A temporary repair shop is to be established at 1318-1320 Ridge avenue. George B. Clay is president and general manager of the new concern.

Dayton, O.—Articles of incorporation have been filed by members of the Dayton Taxicab Co., who absorb the company now operating under that name. The business will be enlarged. The capital stock is \$25,000, of which \$20,000 is common and \$5,000 preferred. The incorporators are John G. Hamilton, G. G. Peckham, Andrew

S. Iddings, Daniel W. Iddings and J. D. Hodson, the last-named being manager of the concern.

Detroit, Mich.—The General Motor Co. has increased its capital from \$10,000 to \$100,000.

St. Louis, Mo.—Kardell Brothers have taken the agency in St. Louis for the Gramm trucks.

Buffalo, N. Y.—The Cartecar agency in Buffalo, in charge of Louis Engel, Jr., has moved to a new location at 721 Main street.

Cleveland, O.—The Booth Demountable Rim Co. has removed its general offices to 8410 Lake avenue, where its factory is located.

Butler, Pa.—The Atwell Automobile Co., capital \$25,000, has been formed at Butler by J. C., Samuel S. and Floyd Atwell.

Tarentum, Pa.—B. J. Nicholas and Howard Pfabe, of Tarentum, Pa., have formed a new company there and will handle the Oakland.

Baltimore, Md.—The S. Mack Motor Co. was recently incorporated in Dover, Del., to manufacture, sell and operate motor vehicles of all kinds. The company has a capital stock of \$50,000. The incorporators are Joseph J. Smith, of Baltimore; Harry C. Yarrow, Jr., George Yarrow and W. K. Yarrow, of Philadelphia.

Racine, Wis.—The Holbrook-Armstrong Iron Co. is now operating with a full force, the work of rebuilding the interior having been completed. The company recently added motor building to its line and is now turning out gasoline motors on a large scale for the trade. About \$40,000 worth of equipment for this purpose was installed.

Hamilton, Ont.—The Baynes Carriage Co., Ltd., and the American Road Machine Co., of Canada, Ltd., have been consolidated under the title of the Acme Motor Carriage and Machinery Co., Ltd., with a capital of \$1,000,000. The manufacture of motor cars will be the special business of the new company, and a large new factory will be erected.

Baker City, Ore.—A substantial and fireproof garage has recently been completed here by Albert Geiser. It will be occupied by him as the agent for the Buick in Baker county. The building is centrally located on a lot 50 by 100 feet, built of natural stone, concrete floor and all metal roof suspended by steel arches at a height of 20 feet.

Columbus, O.—The firm of Howald & Wilkinson, located at Fourth and Spring streets and agents for the Buick and Welch, has been changed by the purchase of the Wilkinson interests by John H. Howald. Hereafter the concern will be styled the John H. Howald Co. In addition to the Buick and Welch the concern has the central Ohio agency for the Rapid truck.

Recent Incorporations

Asbury Park, N. J.—Harris Auto Co., capital stock \$60,000; to manufacture motors, engines, machinery, etc.; incorporators W. B. Loudenslager, J. B. McDeviee, F. C. Muller and A. G. Boettger.

Philadelphia, Pa.—Atwell Auto Co., capital stock \$100,000.

Cleveland, Ohio—Cleveland Apico Sales Co., capital stock \$10,000; to deal in motor cars, etc.; incorporators, W. C. Phelps and others.

Syracuse, N. Y.—James Auto Co., capital stock \$25,000; to deal in motor car accessories and supplies, manufacture, sell and rent motor cars, etc.; incorporators, F. H. Plumb, F. E. Welch and W. D. Andrews.

Detroit, Mich.—Day Automobile Co., capital stock \$300,000; incorporators, T. W. Day, Hugh Jennings, Cameron F. Roberts and Wallace E. Brown.

Jersey City, N. J.—United Motor South Bend Co., capital stock \$2,000.

Jersey City, N. J.—Hardman Tire and Rubber Co., capital stock \$100,000.

Columbus, Ohio—William Cron Sons Co., capital stock \$35,000; to manufacture motor cars; incorporators, John A. Cron, Flora C. Schele, F. J. Cron and A. W. Cron.

Harrisburg, Pa.—Midwest Motor Supply Co., capital stock \$100,000; to manufacture and sell motor cars; incorporators, Frank R. Hansell, John A. MacPeak and William F. Bidell.

Newark, N. J.—Cook's Garage and Renting Co., capital stock \$25,000; incorporators, J. T. Cook, George L. Gibb and Carrie M. Cook.

Newark, N. J.—McCarty-Parker Automobile Co., capital stock \$15,000; directors, Walter G. McCarty, O. K. Park and F. J. Mitchell.



Manufacturers' Communications

CREEPING MOTOR TIRES

CHICAGO—Editor Motor Age—We noticed in the issue of Motor Age of October 6, page 34 of the Readers' Clearing House, a letter from a subscriber in which he complains of tires creeping. We believe a wrong impression prevails regarding this and that this impression should be corrected. We do not make either hard rubber bead, cable or wire-bead tires, but on the contrary make only the fabric-bead type of clincher tires, and we positively guarantee our tires will not creep on any make of clincher or quick-detachable rim that will take a clincher-bead tire. The only reason a tire can possibly creep is when insufficiently inflated. If a tire is allowed to run with 20 or 25 pounds less air than it was made to carry in the first place, it is liable to creep, but if a clincher-bead tire, when placed on a quick-detachable rim, is equipped with a flap it will not creep even if run with 20 or 25 pounds less air than it should have. If a tire is properly inflated, the tube at all times has a tendency to push the beads under the clinches, and it can't creep. The cable or wire in a solid-rim tire does not in any way overcome the tendency to creep. We will positively guarantee our Empire tires with fabric beads to fit any clincher side ring quick detachable rims and not to creep. Motor Age's correspondent desires to know why the shoe crept or slid back. He is speaking of an outside tire protector or shoe such as is used in case of blowout. Every time the wheel goes round, it strikes the edge of this shoe and the laces stretch, which will allow these shoes to be displaced from 2 to 4 inches, according to how tightly they are laced, which can be overcome by placing the shoe over the damaged part of the tire at one end of the shoe so that when it creeps back about 3 inches, it will stop in the middle of the shoe.—Empire Tire Co., E. B. McKay, Chicago manager.

DENIES OVERPRODUCTION

Cleveland, O.—Editor Motor Age—So much has been said, written and published lately regarding the status of the industry that it is time for the old and established firms to take a public stand on the question. Among other things, it has been said by a number of people of late that there is a tremendous overproduction in the business, and that before long the entire trade will feel the effects of it in the matter of cut prices, sales, etc. As a matter of fact, however, the only truth in these rumors lies in the quick failure of a number of concerns which were doomed to a speedy death almost before the first cars were turned out. Probably the best answer to the charge of over-

production can be answered by pointing to the export trade. Had there been any real overproduction, manufacturers would have turned to the foreign market long before this. As it is, however, the standard car makers are approaching this important business in the same quiet, conservative way that they have conducted their business from the start. They are considering the export trade and when conditions are ripe they will go after the business and get it. There is no question but that American made motor cars can hold their own with the best of any manufactured in Europe, and it will not be very long before we will lead in this line, as we do in so many other industries. When that time comes the old world will have awakened to the fact that America is leading in this business as it leads in so many others.—F. B. Stearns Co., F. B. Stearns, president.

TRYING OUT DURALUMIN

Detroit, Mich.—Editor Motor Age—Duralumin, the new alloy discovered by the head chemist, D. A. Weeks of Vickers Sons & Maxim of London, England, bids fair to become an important factor in motor car construction, and our mechanical staff is conducting a series of exhaustive and comprehensive tests with a view to using it in the 1912 Abbott if it is practical. The new metal, which is already hailed abroad as a substitute for steel, will undoubtedly be used before long in the motor industry, and is already recognized as a factor in airship construction at the present time by the English naval constructors at Barrow. The value of the alloy for aeroplanes and motor cars lies in the fact that while it is slightly heavier than pure aluminum, it is as strong as steel and two-thirds as light. It does not corrode easily and is only one-third the weight of brass, and by its use it will be possible to reduce the weight of motor cars fully one-half without sacrificing strength or durability. Its use for fittings and other parts in the motor car industry opens a large field for the production of duralumin and will tend to cheapen its cost. Just think of the possibility of replacing the weight of steel by duralumin in car construction. It would mean the saving of many pounds of excessive weight, allow the use of lighter tires and yet give much larger mileage, as the strain upon the air-inflated tubes would be consequently much lighter. We await the result of the exhaustive experiments we are conducting with the new alloy with a great deal of interest.—Abbott Motor Co., B. C. Spitzley.

RULES FOR THE DRIVER

Peoria, Ill.—Editor Motor Age—It seems to me that more attention should be paid to the rules of the road by motor car drivers and to the equipment and care of cars, so I have jotted down a few of my ideas along this line:

Before leaving the garage the matter of gas supply, filled and well-trimmed lamps, water in the radiator, and lubrication should be looked into and known to be in good condition. The tool kit should be well-stocked, the tires should be examined to see that no tacks, nails, pieces of wire, or other undesirable materials are attached thereto; the extra tire in position, an inner tube aboard to meet possible tire trouble, and the tire pump in good working condition and in place. The storage battery should be properly charged, the car properly cleaned and polished, any slight adjustments to machinery or brakes made, loose wire connections and loose bolts and nuts taken care of.

It is bad practice to sit in a car and allow the motor to run for an indefinite period. Stop the motor and start it when ready to go, thereby saving the gasoline and oil, besides unnecessary wear and tear on the motor.

All driving should be done at a speed with respect to road conditions and the speed ordinances and laws. A good driver never will exceed the speed limit unless he is requested or instructed to do so, and then only on roads clear of other rigs, people or obstructions. The driver should watch the road and slow up for bumps and horses. If horses show signs of bad behavior, stop. At all times in passing horses the motor should be throttled down and the car coasting as nearly as possible. Mufflers should not be cut out in places where it will excite displeasure and criticism of other people.

Drive to miss all of the sticks, stones, bricks and other obstructions that are liable to damage tires. Driving in street car tracks is bad practice as fine particles of steel are apt to injure the tires. Rubbish raked up in piles from yards should be avoided—they are apt to contain tacks and pieces of glass.

In passing other rigs, observe the rules of the road. Never cut in close ahead of another rig. If you have a fast car, others will know it. If you have an exceptional hill-climber, don't be afraid to give the other fellow a chance, and always remember that the driver who drives the car to please the customers, rather than to satisfy the crazy notions of his own, is the fellow most people are willing to retain at the highest salary.—J. B. Bartholomew, Bartholomew Co.



